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# Resources for Bats

August 2002



AWIC Resource Series No. 17





# Information Resources for Bats



**AWIC Resource Series No. 17**

August 2002

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## TABLE OF CONTENTS

Introduction .....	v
General .....	1 - 5
Anatomy .....	5 - 9
Anesthesia .....	9
Auditory / Hearing .....	9 - 31
Biology .....	31 - 38
Care / Housing / Behavior .....	39 - 50
Circulatory .....	51 - 53
Diseases / Parasites .....	54 - 62
Enrichment .....	63
Feeding / Nutrition / Metabolism .....	63 - 73
Histopathology / Immunochemistry .....	73 - 74
Intestinal .....	75 - 76
Muscular .....	76 - 78
Physiology .....	78
Reproductive .....	78 - 89
Research / Biomedical .....	90 - 107
Veterinary .....	107 - 108
Viruses .....	108 - 112
Selected Web site References for Bats .....	113 - 117
Document Delivery Information .....	119 - 124



## **INTRODUCTION**

Bats are an ubiquitous and relatively unknown species of mammal with an undeserved unsavory reputation. While some of them may cause damage to plants, animals or humans (fruit bats or vampire bats), many of them are beneficial to humans (insect eating bats) and a number of bats are being used in various areas of research, especially in auditory research, and exhibits. While there is a great deal of information in the databases on bats it is too voluminous to be presented here. This publication, therefore, contains selected references in a variety of areas with the hope that it will be useful to those using, or wishing to use, bats for whatever purpose they may desire. An additional section on selected web sites concerning bats is also included.



## GENERAL

*Stokes Beginner's Guide to Bats.* Williams, Kim; Stokes, Donald; Stokes, Lillian., New York: Little, Brown and Company, 2001. 144 p. ill. ISBN: 0316816582.  
Descriptors: guide, bats.

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Descriptors: bats, families, genera.

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NAL call no: RA643.7.I6  
Descriptors: diseases, viral, bacterial, fungal, parasitic, transmission.

**Bibliography on bats: 1989-1999.** Anon. *Plecotus et al 2, 1989-1999.* p. 135-157.  
Language: Russian.  
Descriptors: Chiroptera, bibliographies, nearctic regions, palaearctic regions.

**Bats (Chiroptera) - 1998.** Pope, Colin R. *Proceedings of the Isle of Wight Natural History and Archaeological Society 15,* 1999, p. 67-68. ill. ISSN: 0140-3729.  
Descriptors: Chiroptera, roost counts, annual report.

*Bats of the United States.* Harvey, Michael J.; Altenbach, J. Scott; Best, Troy L. Bat Conservation International, P.O. Box 162603, Austin, TX 78716-2603. Tel: 800-538-BATS.  
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Descriptors: bats, biology, feeding behavior, reproduction, hibernation.

*Australian bats.* Churchill, Sue, Reed. New Holland, Sydney, Aukland, etc. 1998, i-x, p. 1-230.  
ISBN: 187633407X.  
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Descriptors: field guide, identification guide, netting, acoustic signals.

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Descriptors: Chiroptera, annual report, distribution records.

*Bat biology and conservation.* Kunz, Thomas H.; Racey, Paul A. (Eds.), Smithsonian Institution Press, Washington, DC, 1998, i-xvi, p.1-365. ill. ISBN: 1560988258.  
NAL call no: QL737.C5B367 1998  
Descriptors: Chiroptera, bat research, symposia papers.

**Mammals - bats.** Childs, Joan; Aldhous, Tony. *Bedfordshire Naturalist,* 1997 (1998), v. 52 (1), p. 29-35. ill. ISSN: 0951-8959.  
Descriptors: Chiroptera, atlases, roosting records, distribution maps.

**Public veterinary medicine: Public health: Zoonoses and potential zoonoses transmitted by bats.** Hoar, Bruce R.; Chomel, Bruno B.; Argaez, Rodriguez, Filipe De J.; Colley, Patricia A., *Journal of the American Veterinary Medical Association*, Jun. 1, 1998, v. 212 (11), p. 1714-1720. ISSN: 0003-1488.

NAL call no: 41.8 Am3

Descriptors: diseases, transmission, infection, virus, bacteria.

**Zoonoses and potential zoonoses transmitted by bats.** Hoar, B.R.; Chomel, B.B.; Argaez-Rodriguez, F. de J.; Colley, P.A. *Journal of the American Veterinary Medical Association*, Jun. 1, 1998, v. 212 (11), p. 1714-1720. ISSN: 0003-1488.

NAL call no: 41.8 Am3

Descriptors: zoonoses, Chiroptera, disease transmission, disease prevention.

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NAL call no: 410 J823

Descriptors: Chiroptera, diet, foraging, echolocation, habitat, research advances.

*Walker's Bats of the World.* Nowak, Ronald, M.; Kunz, Thomas H.; Pierson, Elizabeth D., Baltimore: Johns Hopkins University Press, Jan. 1995. 287 p. ill. ISBN: 0801849861.

NAL call no: QL737.C5N69 1994

Descriptors: science, zoology, bats.

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NAL call no: 275.29 K13Le

Descriptors: housing, management, mycoses, control, histoplasmosis.

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Descriptors: Chiroptera, conservation, biology, mythology, care in captivity.

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NAL call no: SF996.4 C3

Descriptors: Microchiroptera, care in captivity, general and emergency care, injuries.

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NAL call no: QL737.C5E3

Descriptors: aging methods, reviews, skeletal characteristics, Chiroptera.

**Health precautions for bat researchers.** Constantine, D.G., Kunz, T.H. ed. *Ecological and Behavioral Methods for the Study of Bats*. Smithsonian Institution Press, Washington, D.C., 1988, i-xxii, p. 1-533. Chapter pagination: 491-528.

NAL call no: QL737.C5E3

Descriptors: Chiroptera, health precautions for researchers, animals in medicine.

*Natural history of vampire bats.* Greenhall, A.M.(ed.); Schmidt, U. (ed.). 1988, p.p. 246. ref. CRC Press, Inc., Boca Raton, FL. American Museum of Natural History.  
NAL call no: QL737 C52N38 1988  
Descriptors: vertebrates, Chordata, animals.

**Bats. 1987: 240-255. illustr.** Racey, P.A. in Poole, T.B. (ed.) *The UFAW Handbook on the Care and Management of Laboratory Animals*, Longman Scientific & Technical, London. 6<sup>th</sup> Ed. 1987: I-X, 1-933.  
NAL call no: QL55.U5 1987  
Descriptors: techniques, care in captivity, breeding techniques, marking techniques,

**Keeping, Handling and Releasing: 36-41, Illustr.** Racey, P.A. In Mitchell-Jones, A.J. (ed.) *The Bat Worker's Manual*. Nature Conservancy Council, 1987, p. 1-108.  
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Descriptors: techniques, care in captivity, diet, handling.

**American Leaf-Nosed bats: 638-644, Illustr.** Rasweiler, J.J. IV. In Fowler, M.E., *Zoo and Wildlife Medicine*. W.B.Saunders, Co. 2<sup>nd</sup> Revised Ed. 1986: IXXIV, p. 1-1127.  
Descriptors: techniques, care in captivity, breeding techniques.

**Bats (Chiroptera). Introduction: 631-633, Illustr.** Constantine, D.G. in Fowler, M.E. (ed.) *Zoo and Wild Animal Medicine*, W.B. Saunders, Co. Philadelphia. 2<sup>nd</sup> Revised ed. 1986: IXXIV, 1-1127.  
NAL call no: SF996 Z66  
Descriptors: care in captivity, biological notes, health precautions.

**Insectivorous bats..** Constantine, D.G. pp. 650-655 in *Zoo and Wild Animal Medicine*, M.E. Fowler, ed. Philadelphia, W.B. Saunders, 1986. Illustr.  
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NAL call no: Q1 A3A53  
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**Old world fruit bats: 634-637, Illustr.** Carpenter, R.E. in Fowler, M..E. *Zoo and Wild Animal Medicine*, W.B. Saunders, Co. Philadelphia. 2<sup>nd</sup> Revised ed. 1986: I-IXXIV, 1-1127.  
NAL call no: SF996 Z66  
Descriptors: techniques, care in captivity, parasites, diseases, disorders.

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Descriptors: Chiroptera, roost box construction, care in captivity, general anatomy.

**Vampire bats: 644-649, Illustr.** Wimsatt, W.A. In fowler, M.E. (ed.) *Zoo and Wild Animal Medicine*, W.B. Saunders, Co. 2<sup>nd</sup> Revised Ed. 1986, i-xxiv. p. 1-1127.  
NAL call no: SF996 Z66  
Descriptors: techniques, care in captivity, parasites, diseases, disorders.

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Descriptors: Chiroptera, disease, transmission, techniques, animals in medicine.

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NAL call no: QL737.C5 B328  
Descriptors: Chiroptera, common terms, glossaries.

**Ecology of bats.** Fenton, M.B.; Marshall, A.G.; Kunz, T.H. (ed.). 1982, xviii, 425 pp. many fig., 230 X160 mm. many ref. Plenum Press, N.Y. ISBN: 030640950X.  
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NAL call no: QL737.C5 B328  
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Descriptors: Chiroptera, diagnosis.

**Bats.** Fenton, Brock. *Nature Canada*, Jul.-Sept. 1978, v. 7 (3), p. 32.  
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NAL call no: SF996 Z66  
Descriptors: techniques, care in captivity, breeding techniques.

**Bats (Chiroptera). Insectivorous bats. 513-521. Illustr.** Constantine, D.G. in Fowler, M.E. (ed.) *Zoo and Wild Animal Medicine*, W.B. Saunders, Co. 1978: I-XVI. 1-951.  
NAL call no: SF996 Z66  
Descriptors: techniques, diseases, disorders, pathology, care in captivity.

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Descriptors: mammals, animals, vertebrates, Chordata.

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Descriptors: Vampire bats, bibliography.

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Descriptors: management, captivity, wild animals.

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Descriptors: bats, care, management..

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Language: Romanian.

NAL call no: SF604 R48

Descriptors: mouth, tongue, teeth, anatomy, palate.

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Descriptors: hibernation, nerves, heart, cardiac innervation.

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NAL call no: QH212 E4J69

Descriptors: superior olfactory complex, function, structure.

**Anatomical and functional imaging of the auditory cortex in awake mustached bats using magnetic resonance technology.** Kamada, Kyousuke; Pekar, James J.; Kanwal, Jagmeet S. *Brain Research Protocols*, Dec. 1999, v. 4 (3), p. 351-359. ISSN: 1385-299X.

Descriptors: brain, auditory cortex, nervous system.

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NAL call no: 410 Au73  
Descriptors: tongue, microstructures, dental and oral system.

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Descriptors: vertebral column, cervical and upper thoracic vertebrae.

**Ultrastructure of the parotid gland in two species of naked-backed bats.** Tandler, Bernard; Nagato, Toshikazu; Phillips, Carleton J. *Anatomical Record*, Jun. 1, 1999, v. 255 (2), p. 105-115. ill. ISSN: 0003-276X.  
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Descriptors: salivary glands, parotid gland ultrastructure, evolutionary adaptation.

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Descriptors: Chiroptera, teeth, skull, form, function, diet, evolution.

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Descriptors: larynx, nasal passages, morphology, function.

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Descriptors: anatomy, histology, embryology, ultrastructure.

**Allometric patterning in the limb skeleton of bats: Implications for the mechanics and energetics of powered flight.** Swartz, Sharon M., *Journal of Morphology*, Dec. 1997, v. 234 (3), p. 277-294. ISSN: 0362-2525.

NAL call no: 444.8 J826

Descriptors: Chiroptera, limb bones, biomechanics, energetics, powered flight.

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Tandler, B.; Nagato, T.; Phillips, C.J. *Microscopy Research and Techniques*, Jun. 1-15, 1997, v. 37 (5-6), p. 592-597. ISSN: 1059-910X.

NAL call no: QH212 E4J69

Descriptors: anatomy, histology, ultrastructures.

**Scanning electron microscopic observations on the dorsal lingual surface of the lesser dog-faced fruit bat, Cynopterus brachyotis (Megachiroptera, Pteropodidae): Adaptations to frugivory.**

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Descriptors: scanning electron microscopy, morphology, tongue, anatomy.

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Metzner, W. *Journal of Comparative Neurology*, 1996, v. 368 (2), p. 252-269. ISSN: 0021-9967.

NAL call no: QP351.J68

Descriptors: midbrain, paralemniscal-tegmentum, echolocation.

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NAL call no: QL351 Z4

Descriptors: Chiroptera, articulation, pectoral girdle, shoulder joint morphology, function and evolution, phylogeny, flight.

**Patella of selected bats: Patterns of occurrence or absence and associated modification of the quadriceps femoris tendon.**

Smith, Bonnie J.; Holladay, Steven D.; Smith, Stephen A.,

*Anatomical Record*, 1995, v. 242 (4), p. 575-580. ISSN: 0003-276X.

NAL call no: 447.8 AN1

Descriptors: morphology, skeletal system, muscular system, histology.

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Descriptors: cochlea anatomy, histology, magnetic resonance imaging.

**Anatomical study of the nasal cavity of the bats (Rhinolophus ferrumequinum micadoi).**

Maeada, H.; Kimura, J.; Tsukise, A.; Okano, M., *Bulletin of the College of Agriculture and Veterinary Medicine*, Nihon University, No. 49, 1992, p. 73-81. ill. ISSN: 0078-0839.

Language: Japanese.

NAL call no: 41.9 T5762

Descriptors: chemoreception, nasal cavity anatomy, nasal passages, significance in chemoreception.

**Anatomical study of the vomeronasal organ of bats (Miniopterus schreibersi fuliginosus).** Arai, H.; Kimura, J.; Tsukise, A.; Okano, M., *Bulletin of the College of Agriculture and Veterinary Medicine*, Nihon University, No. 49, 1992, p. 42-52. ill. ISSN: 0078-0839.

Language: Japanese.

NAL call no: 41.9 T5762

Descriptors: chemoreception, vomeronasal organ anatomy.

**Anatomy of the nose of the oriental frosted bat (Vespertilio orientalis).** Shirota, M.; Mukohyama, M.; Kogure, N.; Mizoguchi, S.; Kimura, J.; Tsukise, A.; Okano, M., *Bulletin of the College of Agriculture and Veterinary Medicine*, Nihon University No. 47, 1990, p. 97-106. ill. ISSN: 0078-0839.

NAL call no: 41.9 T5762

Language: Japanese.

Descriptors: snout, nasal passages, anatomy.

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Descriptors: anatomy, histology, growth, development.

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Descriptors: cochlea ultrastructure, fibroblasts, anatomy, histology.

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NAL call no: Film S-1779

Descriptors: acoustic stimulation, brain mapping, anatomy, histology.

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NAL call no: SF604 A77

Descriptors: spinal cord, anatomy.

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NAL call no: Film S-1779

Descriptors: anatomy, histology, Chiroptera, infrared rays, sensation physiology.

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NAL call no: QL737.C5 B328

Descriptors: Chiroptera, biophysics, vertebral column, cervical vertebrae.

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Descriptors: ultrastructure, anatomy, histology, cytology.

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NAL call no: QL737.C5 B328

Descriptors: hibernation, mineral metabolism, bone cell changes, calcium metabolism.

**Phylogenetic analysis of chiroptean dentition.** Koopman, K.F.; MacIntyre, G.T. *Proceedings of the International Bat Research Conference 5*, 1980, p. 279-288. ill.

NAL call no: QL737 C5I55 1978

Descriptors: Chiroptera, dentition, phylogenetic use, phylogeny.

## ANESTHESIA

**Isoflurane anaesthesia in rabbits, rodents, bats and hedgehogs.** Hochleithner, M.; Hochleithner, C.; Engel, K. *Kleintierpraxis*, 1996, v. 41 (3), p. 187-190. ref. ISSN: 0023-2076.

Language: German

NAL call no: 41.8 K67

Descriptors: anaesthesia, anaesthetics, recovery, inhaled anaesthetics.

**Ketamine and ketamine: xylazine ED-50 for short-term immobilization of the island flying fox (Pteropus hypomelanous).** Heard, Darryl J.; Beale, Chris; Owens, John. *Journal of Zoo and Wildlife Medicine*, 1996, v. 27 (1), p. 44-48. ISSN: 1042-7260.

NAL call no: SF601 J6

Descriptors: ketamine, heart rate, immobilization, ketamine/xylazine, respiration rate.

**Bat anaesthesia.** (Correspondence), Routh, A., *Veterinary Record*, UK, 1995, v. 137 (18), p. 472.

ISSN: 0042-4900.

NAL call no: 41.8.V641

Descriptors: anaesthesia, inhaled anaesthetics, animal welfare.

## AUDITORY / HEARING

**Multiple combination-sensitive neurons in the auditory cortex of the mustached bat.** Misawa, Hayato; Suga, Nobuo. *Hearing Research*, Jan. 2001, v. 151 (1-2), p. 15-29. ISSN: 0378-5955.

Descriptors: Neurology, sense organs, sensory reception, Chiroptera.

**Sound localization in a new-world frugivorous bat, *Artibeus jamaicensis*: Acuity, use of binaural cues, and relationship to vision.** Heffner, Ricky S.; Koay, Gimseong; Heffner, Henry E. *Journal of the Acoustical Society of America*, Jan. 2001, v. 109 (1), p. 412-421. ISSN: 0001-4966.

NAL call no: QC221.A27

Descriptors: Chiroptera, sensory system, ganglion cells, nervous system.

**Topographical distribution of delay-turned responses in the mustached bat inferior colliculus.** Portfors, Christine V.; Wenstrup, Jeffery J. *Hearing Research*, Jan. 2001, v. 151 (1-2), p. 95-105. ISSN: 0378-5955.

Descriptors: auditory cortex, nervous system, delay-tuned neurons.

**Bicuculline application affects discharge patterns, rate-intensity functions, and frequency tuning characteristics of bat auditory cortical neurons.** Chen, Qi Cai; Jen, Philip H.S. *Hearing Research*, Dec. 2000, v. 150 (1-2), p. 161-174. ISSN: 0378-5955.

Descriptors: auditory cortex, brain stem, nervous system.

**Continuous hair cell turnover in the inner ear vestibular organs of a mammal, the Daubenton's bat (*Myotis daubentonii*).** Kirkegaard, M.; Jorgensen, J.M. *Naturwissenschaften*, Feb. 2000, v. 87 (2), p. 83-86. ill. ISSN: 0028-1042.

NAL call no: 474 N213

Descriptors: auditory hairs, hair cells of inner ear, evidence of continuous turnover.

**Corticofugal inhibition compresses all types of rate-intensity functions of inferior collicular neurons in the big brown bat.** Zhou, Xiaoming; Jen, Philip H.S. *Brain Research*, Oct. 20, 2000, v. 881 (1), p. 62-68. ISSN: 0006-8993.

NAL call no: Film S-1779

Descriptors: nervous system, sensory reception, inhibition.

**Corticofugal regulation of excitatory and inhibitory frequency tuning curves of bat inferior collicular neurons.** Jen, P.H.; Zhang, J.P. *Brain Research*, Sep. 11, 2000, v. 841 (1-2), p. 184-188. ISSN: 0006-8993.

NAL call no: Film S-1779

Descriptors: corticofugal, frequency tuning curves, excitatory, inhibitory.

**Directional sensitivity of frequency tuning curves of inferior collicular neurons in big brown bat, *Eptesicus fuscus*.** Zhang, Ji Ping; Jen, P.H.S.; Sun, Xin de. *Acta Biophysica Sinica*, Mar. 2000, v. 16 (1), p. 81-88. ill. ISSN: 1000-6737.

Language: Chinese.

Descriptors: brain, neurons, inferior colliculus, frequency tuning.

**Features of contralaterally evoked inhibition in the inferior colliculus.** Bauer, E.E.; Klug, A.; Pollak, G.D. *Hearing Research*, Mar. 2000, v. 141 (1-2), p. 80-96. ISSN: 0378-5955.

Descriptors: inferior colliculus, inhibition, features.

**Foliage echos: A probe into the ecological acoustics of bat echolocation.** Muller, Rolf; Kuc, Roman. *Journal of the Acoustical Society of America*, Aug. 2000, v. 108 (2), p. 836-845. ISSN: 0001-4966.

NAL call no: QC221.A27

Descriptors: biosonar system, echolocation, communication.

**Molecular evidence regarding the origin of echolocation and flight in bats.** Teeling, Emma C; Scally, Mark; Kao, Diana J.; Romagnoli, Michael L.; Springer, Mark S.; Stanhope, Michael J. *Nature* (London), Jan. 13, 2000, v. 403 (6766), p. 188-192. ill. ISSN: 0028-0836.

NAL call no: 472 N21

Descriptors: nucleic acids, echolocation, molecular genetics, phylogeny.

**Nerual inhibition sharpens auditory spatial selectivity of bat inferior collicular neurons.** Zhou, X.M.; Jen, P.H.S. *Journal of Comparative Physiology A: Sensory, Neural & Behavioral Physiology*, Apr. 2000, v. 186 (4), p. 389-398. ill. ISSN: 0340-7594.

NAL call no: QP33.J68

Descriptors: brain, neurons, echolocation, *Eptesicus fuscus*.

**Neural responses to overlapping FM sounds in the inferior colliculus of echolocating bats.**

Sanderson, Mark I.; Simmons, James, A. *Journal of Neurophysiology*, Apr. 2000, v. 83 (4), p. 1840-1855. ill. ISSN: 0022-3077.

Descriptors: brain, inferior colliculus, neurons, echolocation, sound.

**Neuronal sensitivity to interaural time differences in the sound envelope in the auditory cortex of the pallid bat.** Lohuis, Thomas D.; Fuzessery, Zoltan M. *Hearing Research*, May, 2000, v. 143 (1-2), p. 43-57. ISSN: 0378-5955.

Descriptors: neuronal sensitivity, time differences, auditory cortex.

**Reorganization of the frequency map of the auditory cortex evoked by cortical electrical stimulation in the big brown bat.** Chowdhury, Syed A.; Suga, Nobuo. *Journal of Neurophysiology*, Apr. 2000, v. 83 (4), p. 1856-1863. ill. ISSN: 0022-3077.

Descriptors: brain, auditory cortex, neurons, echolocation.

**The role of GABAergic inhibition on direction-dependent sharpening of frequency tuning in bat inferior collicular neurons.** Jen, P.H.; Zhang, J. *Brain Research*, Apr. 17, 2000, v.862 (1-2), p. 127-137. ISSN: 0006-8993.

NAL call no: Film S-1779

Descriptors: GABA, inhibition, frequency tuning, neurons.

**Spectral integration in the inferior colliculus of the mustached bat.** Leroy, Scott A.; Wenstrup, Jeffrey J. *Journal of Neuroscience*, Nov. 2000, v. 20 (22), p. 8533-8541. ISSN: 0270-6474.

Descriptors: behavior, nervous system, Chiroptera, neural coordination.

**Vocal control of acoustic information for sonar discriminations by the echolocating bat, *Eptesicus fuscus*.** Wadsworth, James: Moss, Cynthia F. *Journal of the Acoustical Society of America*, Apr. 2000, v. 107 (4), p. 2265-2271. ill. ISSN: 0001-4966.

NAL call no: QC221.A27

Descriptors: echolocation, vocal control of acoustic information for sonar discriminations.

**Acoustic flow perception in cf-bats: Properties of the available cues.** Muller, Rolf; Schnitzlwe, Hans Ulrich. *Journal of the Acoustical Society of America*, May 1999, v. 105 (5), p. 2958-2966. ill. ISSN: 0001-4966.  
NAL call no: QC221.A27  
Descriptors: echolocation, acoustic flow perception, Pteronotus, Rhinolophus.

**Audiovocal behavior of Doppler-shift compensation in the horseshoe bat survives bilateral lesion of the paralemniscal tegmental area.** Pillat, J.; Schuller, G. *Experimental Brain Research*, Mar. 1999, v. 119 (1), p. 17-26. ISSN: 0014-4819.  
Descriptors: tegmental area lesion, injury, nervous system disease.

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NAL call no: 410 AC87  
Descriptors: echolocation, signal characteristics, Murina leucogaster, Pipistrellus savvi, Rhinolophus ferrumequinum.

**Corticofugal amplification of facilitative auditory responses of subcortical combination-sensitive neurons in the mustached bat.** Yan, Jun; Suga, Nobuo. *Journal of Neurophysiology*, Feb. 1999, v. 81 (2), p. 817-824. ill. ISSN: 0022-3077.  
Descriptors: brain, neurons, sound reception.

**Corticofugal regulation of excitatory and inhibitory frequency tuning curves of bat inferior collicular neurons.** Jen, Philip, H.S.; Zhang, Ji Ping. *Brain Research*, Sep. 11, 1999, v. 841 (1-2), p. 184-188. ISSN: 0006-8993.  
NAL call no: Film S-1779  
Descriptors: inferior collicular, neurons, nervous system, inhibitory.

**Describing the echolocation calls and behavior of bats.** Fenton, M. Brock. *Acta Chiropterologica*, 1999, v. 1 (2), p. 127-136. ill. ISSN: 1508-1109.  
Descriptors: behavioral techniques, echolocation, calls and behavior.

**Echolocation signals of the bat, Eptesicus serotinus recorded using a vertical microphone array: Effect of flight altitude on searching signals.** Jensen, Marieanne Egebjerg; Miller Lee A.; *Behavioral Ecology and Sociobiology*, Dec. 1999, v. 47 (1-2), p. 60-69. ISSN: 0340-5443.  
NAL call no: QL751.B4  
Descriptors: acoustic behavior, flight altitude, echolocation signals.

**Effects of monaural plugging on the GABA-immunopositive neurons in the inderior colliculus of bat, Myotis chinensis.** Zhou, Xiaoming; Sun, Xinde. *Acta Biophysica Sinica*, Mar. 1999, v. 15 (1), p. 220-224. ill. ISSN: 1000-6737.  
Descriptors: neurons, neurotransmitters, brain, inferior colliculus, monaural plugging.

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NAL call no: QP33 J68

Descriptors: sonographic technique, echolocation, frequency discrimination.

**Frequency organization and response to complex sounds in the medial geniculate body of the mustached bat.** Wenstrup, Jeffrey, J. *Journal of Neurophysiology*, Nov. 1999, v. 82 (5), p. 2528-2544. ISSN: 0022-3077.

Descriptors: auditory cortex, nervous system, medial geniculate body.

**The influence of electrical stimulation of bat auditory cortex on auditory sensitivity of inferior collicular neurons.** Zhang, Jiping; Sun, Xinde; Zhan, Xiping; Yang, Hongyan. *Acta Biophysica Sinica*, Mar. 1999, v. 15 (1), p. 98-103. ill. ISSN: 1000-6737.

Language: Chinese.

Descriptors: brain, neurons, auditory sensitivity, Hipposideros.

**Micromechanical responses to tones in the auditory fovea of the greater mustached bat's cochlea.** Russell, I.J.; Kossl, M. *Journal of Neurophysiology*, Aug. 1999, v. 82 (2), p. 676-686. ill. ISSN: 0022-3077.

Descriptors: ear, tones, sound.

**Response characteristics of neurons in the medial geniculate body of the little brown bat to simple and temporally-patterned sounds.** Llano, D.A.; Feng, A.S. *Journal of Comparative Physiology A: Sensory, Neural and Behavioral Physiology*, Apr. 1999, v. 184 (4), p. 371-385. ill. ISSN: 0340-7594.

NAL call no: QP33 J68

Descriptors: brain, medial geniculate body, neurons, sound reception.

**Scaling of echolocation call parameters in bats.** Jones, Gareth. *Journal of Experimental Biology*, Dec. 1999, v. 202 (23), p. 3359-3367. ISSN: 0022-0949.

NAL call no: 442.8 B77

Descriptors: biosonar, body size, call frequency, echolocation.

**Sound duration selectivity in the pallid bat inferior colliculus.** Fuzessery, Z.M.; Hall, J.C. *Hearing Research*, Nov. 1999, v. 137 (1-2), p. 137-154. ISSN: 0378-5955.

Descriptors: auditory cortex, midbrain, nervous system.

**Sound localization in an old-world fruit bat (*Rousettus aegyptiacus*): Acuity, use of binaural cues, and relationship to vision.** Heffner, Rickye, S.; Koay, Gimseong; Heffner, Henry E. *Journal of Comparative Psychology*, Sept. 1999, v. 113 (3), p. 297-306. ISSN: 0735-7036.

NAL call no: BF671.J6

Descriptors: acuity, binaural cues, conditioned avoidance, echolocation, intensity.

**Timing in the auditory system of the bat.** Covey, Ellen; Casseday, John H. *Annual Review of Physiology*, 1999, v. 61, p. 457-476. ill. ISSN: 0066-4278.

NAL call no: 444.8 An7

Descriptors: Chiroptera, neurons, sound reception, echolocation, sound.

**Auditory motion induces directionally dependent receptive field shifts in inferior colliculus neurons.** Wilson, W.W.; O'Neill, W.E. *Journal of Neurophysiology*, Apr. 1998, v. 79 (4), p. 2040-2062. ISSN: 0022-3077.

Descriptors: auditory motion, receptive field shifts, inferior colliculus neurons.

**Audiovocal behavior of Doppler-shift compensation in the horseshoe bat survives bilateral lesion of the paralemniscal tegmental area.** Pillat, J.; Schuller, G. *Experimental Brain Research*, Mar. 1998, v. 119 (1), p. 17-26. ISSN: 0014-4819.

Descriptors: audiovocal behavior, Doppler shift, bilateral lesion.

**Changes in cochlear mechanics during vocalization: Evidence for a phasic medial efferent effect.** Goldberg, R.L.; Henson, O.W. *Hearing Research*, Aug. 1998, v. 122 (1-2), p. 71-81. ISSN: 0378-5955.

Descriptors: cochlear mechanics, vocalization, physiology, neurons.

**Compromises: Sound frequencies used in echolocation by aerial-feeding bats.** Fenton, M.B.; Portfors, C.V.; Rautenbach, I.L.; Waterman, J.M. *Canadian Journal of Zoology*, Jun. 1998, v. 76 (6), p. 1174-1182. ill. ISSN: 0008-4301.

NAL call no: 470 C16D

Descriptors: Chiroptera, echolocation, feeding behavior, insect prey.

**Corticofugal modulation of the midbrain frequency map in the bat auditory system.** Yan, Wei; Suga, Nobuo. *Nature Neuroscience*, May 1998, v. 1 (1), p. 54-58. ill. ISSN: 1097-6256.

Descriptors: brain, neurons, sound reception.

**Features of ipsilaterally evoked inhibition in the dorsal nucleus of the lateral lemniscus.** Yang, L.; Pollak, G.D. *Hearing Research*, Aug. 1998, v. 122 (1-2), p. 125-141. ISSN: 0378-5955.

Descriptors: dorsal nucleus, lateral lemniscus, evoked inhibition.

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Descriptors: proteins, brain, neurotransmitters, GABAergic, glycinergic.

**Hearing and hunting in red bats (*Lasiurus borealis*, Vespertilionidae): Audiogram and ear properties.** Obrist, Martin K.; Wenstrup, Jeffery J. *Journal of Experimental Biology*, Jan. 1998, v. 201 (1), p. 143-154. ill. ISSN: 0022-0949.

NAL call no: 442.8 B77

Descriptors: sound reception, hearing, ear, echolocation, foraging.

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NAL call no: 444.8 Z3

Descriptors: sound reception, behavioral variation, audiogram, species comparisons.

**How echolocating bats approach and acquire food.** Kalko, Elisabeth K.V.; Schnitzler, Hans Ulrich. Kunz, thomas H. & Racey, Paul A. (eds). *Bat Biology and Conservation*. Smithsonian

Institution Press, Washington. 1998, i-xvi, p. 1-365. Chapter pagination: 197-204. ill. ISBN: 1560988258.

NAL call no: QL737 C5B367 1998

Descriptors: Chiroptera, echolocation, food capture, foraging, literature review.

**How echolocating bats search and find food.** Schnitzler, Hans Ulrich; Kalko, Elisabeth K. V.,

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NAL call no: QL737 C5B367 1998

Descriptors: Chiroptera, echolocation, foraging, literature review.

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NAL call no: QC221.A27

Descriptors: acoustic localization, echolocation, passive acoustic filtering.

**Passive sound-localization ability of the big brown bat, *Eptesicus fuscus*.** Koay, Gimseong;

Kearns, Dara; Heffner, Henry E.; Heffner, Ricky S. *Hearing Research*, May, 1998, v. 119 (1-2), p. 37-48. ISSN: 0378-5955.

Descriptors: high frequency tones, low frequency tones, passive sound localization.

**Processing of sinusoidally frequency modulated signals in the nuclei of the lateral lemniscus of the big brown bat, *Eptesicus fuscus*.** Huffman, Russell F.; Argeles, Pablo C.; Covey, Ellen. *Hearing Research*, Dec. 1998, v. 126 (1-2), p. 161-180. ISSN: 0378-5955.

Descriptors: biosonar signal, coefficient of synchronization, sense organs.

**Processing of sinusoidally amplitude modulated signals in the nuclei of the lateral lemniscus of the big brown bat, *Eptesicus fuscus*.** Huffman, R.F.; Argeles, P.C.; Covey, E. *Hearing Research*, Dec. 1998, v. 126 (1-2), p. 181-200. ISSN: 0378-5955.

Descriptors: auditory pathways, physiology, brain stem physiology.

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NAL call no: QL737 C5B367 1998

Descriptors: brain, Superior colliculus, echolocation, review.

**Spontaneous classification of complex tones at high and ultrasonic frequencies in the bat, *Megaferma lyra*.** Preisler, Annemarie lyra. *Journal of the Acoustical Society of America*, May, 1998, v. 103 (5), p. 2595-2607. ISSN: 0001-4966.

NAL call no: QC221.A27

Descriptors: brain, echolocation, high and ultrasonic frequencies.

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NAL call no: QC221.A27  
Descriptors: echolocation, insect-prey target flutter rate, frequency modulated sonar sounds.

**Temporal processing across frequency channels by FM selective auditory neurons can account for FM rate selectivity.** Gordon, M; O'Neill, W.E. *Hearing Research*, Aug. 1998, v. 122 (1-2), p. 97-108. ISSN: 0378-5955.  
Descriptors: brain stem, physiology, auditory perception, Chiroptera.

**Tonic efferent-induced cochlear damping in roosting and echolocating mustached bats.** Xie, D.H.; Hensen, O.W. Jr. *Hearing Research*, Oct. 1998, v. 124 (1-20, P. 60-68. ISSN: 0378-5955.  
Descriptors: echolocating, roosting, sensory system, cochlea.

**Acute sensitivity to interaural time differences in the inferior colliculus of a bat that relies on passive sound localization.** Fuzessery, S.M. *Hearing Research*, Jul. 1997, v. 109 (1-2), p. 46-62. ill. ISSN: 0378-5955.  
Descriptors: brain, inferior colliculus, role in passive sound localization, sound reception.

**Audiogram of the big brown bat (Eptesicus fuscus).** Koay, Gimseong; Heffner, Henry E.; Heffner, Ricky S. *Hearing Research*, Mar. 1997, v. 105 (1-2), p. 202-210. ISSN: 0378-5955.  
Descriptors: ear, audiogram, frequency range determination, sound.

**The columnar region of the ventral nucleus of the lateral lemniscus in the big brown bat, Eptesicus fuscus: Synaptic arrangements and structural correlates of feedforward inhibitory function.** Vater, M.; Covey, E.; Casseday, J.H. *Cell and Tissue Research*, 1997, v. 289 (2), p. 223-233. ISSN: 0302-766X.  
NAL call no: QH581.A1Z4  
Descriptors: ascending auditory pathway, feedforward inhibitory function, nervous system, synaptic arrangements, neurons.

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NAL call no: QH581.A1Z4  
Descriptors: cochlear nucleus, cytological method, glycine, immunochemistry.

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Language: Chinese.  
Descriptors: Chiroptera, nervous system, effect of GABA, neurotransmitters.

**Neural tuning to sound duration in the inferior colliculus of the big grown bat, Eptesicus fuscus.** Ehrlich, Daphna; Casseday, John H.; Covey, Ellen. *Journal of Neurophysiology*, May 1997, v. 77 (5), p. 2360-2372. ill. ISSN: 0022-3077.  
Descriptors: neural tuning, sound duration, inferior colliculus.

**NMDA-mediated facilitation in the echo-delay tuned areas of the auditory cortex of the mustached bat.** Tanahashi, Atsushi; Horikawa, Junsei; Suga, Nobuo. *Hearing Research*, Aug. 1997, v. 110 (1-2), p. 219-228. ill. ISSN: 0378-5955.  
Descriptors: brain, neurons, echolocation, auditory cortex.

**Neural selectivity and tuning for sinusoidal frequency modulations in the inferior colliculus of the big brown bat, *Eptesicus fuscus*.** Casseday, John H.; Covey, Ellen; Grothe, Benedikt. *Journal of Neurophysiology*, Mar. 1997, v. 77 (3), p. 1595-1605. ill. ISSN: 0022-3077.  
Descriptors: brain, inferior colliculi, neurons, ear.

**Sharpening of frequency tuning by inhibition in the thalamic auditory nucleus of the mustached bat.** Suga, Nobuo; Zhang, Yunfeng; Yan, Jun. *Journal of Neurophysiology*, Apr. 1997, v. 77 (4), p. 2098-2114. ill. ISSN: 0022-3077.  
Descriptors: brain, neurons, sound, thalamic auditory nucleus.

**Auditory computation for biosonar target imaging in bats.** Simmons, J.A.; Saillant, P.A.; Ferragamo, M.J.; Haresign, T.; Dear, S.P.; Fritz, J.; McMullen, T.A. *Springer Handbook of Auditory Research*, 1996, v. 6, p. 401-468. ill. ISSN: 0947-2657.  
Descriptors: Chiroptera, brain, neurons, ear, echolocation, orientation.

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Language: Chinese.  
Descriptors: brain, neurons, echolocation, orientation.

**The course and distribution of medial efferent fibers in the cochlea of the mustached bat.** Henson, M.M ; Xie, D.H.; Wynne, R.H.; Wilson, J.L.; Henson, O.W. Jr. *Hearing Research*, Dec. 1996, v. 102 (1-2), p. 99-115. ill. ISSN: 0378-5955.  
Descriptors: neurons, ear, cochlea, medial olivocochlear nerve fibers.

**The early postnatal development of F-actin patterns in the organ of Corti of the gerbil (*Meriones unguiculatus*) and the horseshoe bat (*Rhinolophus rouxi*).** Kuhn, Brigit; Vater, Marianne. *Hearing Research*, Sept. 1996, v. 99 (1-2), p. 47-70. ill. ISSN: 0378-5955.  
Descriptors: proteins, F-actin patterns in the organ of Corti, postnatal development.

**Further studies on the mechanics of the cochlear partition in the mustached bat. 1. Ultrastructural observations on the tectorial membrane and its attachments.** Vater, Marianne; Kossl, Manfred. *Hearing Research*, 1996, v. 94 (1-2), p. 63-77. ill. ISSN: 0378-5955.  
Descriptors: biophysics, ear, echolocation, cochlear partition mechanics.

**Further studies on the mechanics of cochlear partition in the mustached bat. 2. A second cochlear frequency map derived from acoustic distortion products.** Kossl, Manfred; Vater, Marianne. *Hearing Research*, May, 1996, v. 94 (1-2), p. 78-86. ill. ISSN: 0378-5955.  
Descriptors: biophysics, ear, echolocation, *Pteronotus parnellii*.

**A microiontophoretic study of acetylcholine effects in the inferior colliculus of horseshoe bats: Implications for a modulatory role.** Habbicht, H.; Vater, M. *Brain Research*, Jun. 17, 1996, v. 724 (2), p. 169-179. ISSN: 0006-8993.  
NAL call no: Film S-1779  
Descriptors: acetylcholine, pharmacology, physiology, Chiroptera.

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Descriptors: brain, midbrain, thalamus, echolocation, sound.

**Monaural and binaural spectral cues created by the external ears of the pallid bat.** Fuzessery, Zoltan M. *Hearing Research*, May 1996, v. 95 (1-2), p. 1-17. ill. ISSN: 0378-5955.  
Descriptors: external ears, Antrozous pallidus, binaural spectral cue creation.

**Neural ensemble coding of target identity in echolocating bats.** Ratnam, R.; Condon, C.J.; Feng, A.S. *Biological Cybernetics*, 1996, v. 75 (2), p. 153-162. ISSN: 0340-1200.  
Descriptors: echolocation, nervous system, neural ensemble coding.

**Temporal integration in the echolocating bat, Megaderma lyra.** Wiegerebe, Lutz; Schmidt, Sabine. *Hearing Research*, 1996, v. 102 (1-2), p. 35-42. ill. ISSN: 0378-5955.  
Descriptors: Megaderma lyra, echolocation, auditory temporal integration.

**Analysis and classification of delay-sensitive cortical neurons based on response to temporal parameters in echolocation signals.** Chittajallu, S.K.; Palakal, M.J.; Wong, D. *Hearing Research*, Apr. 1995, v. 84 (1-2), p. 157-166. ISSN: 0378-5955.  
Descriptors: auditory cortex, chemistry, Chiroptera physiology.

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Descriptors: proteins, tubulin and fodrin in Organ of Corti, ear, tubulin and fodrin.

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NAL call no: Film S-1779

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NAL call no: QL751.B4

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NAL call no: Film S-1779

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NAL call no: 472 N21

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NAL call no: QP33.J68

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NAL call no: Film S-1779

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Descriptors: cochlear nucleous, catecholamine fibers, bats.

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NAL call no: QP351 N3

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NAL call no: Film S-1779

Descriptors: auditory cortex physiology, audiometry, brain mapping.

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Descriptors: enclosure utilization, social behavior, vampire bat.

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NAL call no: QL76.I5

Descriptors: breeding, maintaining, bats.

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NAL call no: QL737.C5 B328

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**Keeping bats in the laboratory.** Ewers, W.H. *Australian Bat Research News*, 1974, v. 13, p. 6

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Descriptors: bats, keeping in laboratory.

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NAL call no: 410 J823.

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NAL call no: 410.9 P94

Descriptors: laboratory, Chiroptera, physiology, nutrition.

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NAL call no: 410.9 P94

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NAL call no: QP1.C6

Descriptors: energy utilization, water requirements, Myotis.

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Descriptors: maintenance, breeding, captivity.

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NAL call no: QL76.I5

Descriptors: breeding, hand rearing, fruit bats.

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NAL call no: QL76.I5

Descriptors: fruit bats, free-flight, aviaries.

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NAL call no: 410 J823

Descriptors: laboratory care, thermal neutrality.

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NAL call no: 410 M31

Descriptors: captive vampire bats, behavior.

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NAL call no: QL77.5 C7

Descriptors: management, captivity, wild mammals.

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Descriptors: care, maintenance, vampire, captivity.

**Successful breeding in captive Artibeus.** Novick, A. *Journal of Mammalogy*, 1960, v. 41 (4), p. 508-509. ISSN: 0022-2372.  
NAL call no: 410 J823  
Descriptors: breeding, captivity, Artibus.

**Keeping bats in captivity.** Orr, R.T. *Journal of Mammalogy*, 1958, v. 39 (3), p 339-344. ISSN: 0022-2372.  
NAL call no: 410 J823  
Descriptors: keeping bats, captivity.

**The laboratory care of the Mexican free-tailed bat.** Krutzsch, P.H.; Sulkin, S.E. *Journal of Mammalogy*, 1958, v. 34, p. 129-148.  
NAL call no: 410 J823  
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NAL call no: 410 J823  
Descriptors: program for captivity, free-tailed bat.

**Notes on keeping bats in captivity.** Ramage, M.C. *Journal of Mammalogy*, 1947, v. 28 (1), p. 60-62.  
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NAL call no: 410 J823  
Descriptors: bats, captivity, keeping.

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Descriptors: vampire bat, longevity in captivity.

**Raising the young of red bats on artificial diet.** Gates, W.H. *Journal of Mammalogy*, 1938, v. 19, p. 461-464. ISSN: 0022-2372.  
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Descriptors: red bats, young, artificial diet.

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NAL call no: 410 J823  
Descriptors: bats, captivity, keeping.

## CIRCULATORY

### Rapid GLUT-1 mediated glucose transport in erythrocytes from the grey-headed fruit bat

(*Pteropus poliocephalus*). Craik, James D.; Markovich, Daniel, *Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology*, May, 2000, v. 126A (1), p. 45-55.

ISSN: 1095-6433.

NAL call no: QP1.C6

Descriptors: glucose transport by erythrocytes, blood cells, proteins.

### Diurnal and seasonal changes in blood composition of the free-living Egyptian fruit bat (*Rousettus aegyptiacus*)

Korine, C.; Zinder, O.; Arad, Z., *Journal of Comparative Physiology B: Biochemical, Systemic and Environmental Physiology*. Jul. 1999, v. 169 (4-5), p. 280-286. Ill.

ISSN: 0174-1578.

NAL call no: QP33 J681

Descriptors: blood composition, weight, biochemistry, food, plants, diet.

### Blood values of the wrinkle-lipped bat (*Chaerephon plicata*)

Torno, Christopher S.; Marte, Benjamin Reuel G.; Creus, Dante C. *Philippine Journal of Veterinary Medicine*, Jun.-Dec., 1998, v. 35 (1-2), p. 67-71. ISSN: 0031-7705.

NAL call no: 41.8 P53

Descriptors: blood parameters, blood, sex, age, weight, biochemical sex differences.

### Hematologic and plasma biochemical reference values for three flying fox species (*Pteropus* sp.)

Heard, Darryl J.; Whittier, Darby A., *Journal of Zoo and Wildlife Medicine*, Dec. 1997, v. 28 (4), p. 464-470. ISSN: 1042-7260.

NAL call no: SF601 J6

Descriptors: hematology, biochemical reference values, health evaluation.

### Dilated cardiomyopathy associated with hypovitaminosis E in a captive collection of flying foxes (*Pteropus* spp.)

Heard, Darryl J.; Buergelt, Claus D.; Snyder, Patti S.; Voges, Andra K.; Dierenfeld, Ellen S., *Journal of Zoo and Wildlife Medicine*, 1996, v. 27 (2), p. 149-157. ISSN: 1042-7260.

NAL call no: SF601 J6

Descriptors: cardiovascular system, metabolism, nutrition.

### High plasma cholesterol, but low triglycerides and plaque-free arteries, in Mexican free-tailed bats

Widmaier, E.P.; Gornstein, E.R.; Hennessey, J.L.; Bloss, J.M.; Greenberg, J.A.; Kunz, T.H. *American Journal of Physiology*, Nov. 1996, v. 271 (5) (Part 2), p. R1101-R1106. ill. ISSN: 0002-9513.

NAL call no: 447.8.AM3

Descriptors: lipids, steroids, insect prey, plasma, hormones, diseases and disorders.

### Structural features mediating fibrin selectivity of vampire bat plasminogen activators

Bringmann, P.; Gruber, D.; Liese, A.; Toschi, L.; Kratzschmar, J.; Schleuning, W.D.; Donner, P. *Journal of Biological Chemistry*, Oct. 27, 1995, v. 270 (43), p. 25596-25603. ISSN: 0021-9258.

NAL call no: 381.J824

Descriptors: Desmodus rotundus, enzymes, salivary glands, fibrin selectivity.

**Neuropeptide Y innervation of cerebral arteries in microchiropteran bats.** Ando, K.; Arai, S.

*Zoological Science*, 1992, v. 9 (4), p. 823-834. ISSN: 0289-0003.

NAL call no: QL1.Z68

Descriptors: neuropeptide-Y, brain, arteries.

**Venular vasomotion in the bat wing.** Torres, Filho I.P. *Microvascular Research*, Mar. 1990, v. 39 (2),

p. 246-149. ISSN: 0026-2862.

Descriptors: veins, wing blood supply, anatomy, physiology.

**Vasomotion frequency and amplitude related to intraluminal pressure and temperature in the wing of the intact, unanesthetized bat.** Bouskela, E. *Microvascular Research*, May, 1989, v. 37 (3), p. 339-351. ISSN: 0026-2862.

Descriptors: arterioles physiology, wing blood supply, biological clocks.

**Distribution and origin of vasoactive intestinal polypeptide (VIP)-immunoreactive, acetylcholinesterase-positive and adrenergic nerves of the cerebral arteries in the bent-winged bat (Mammalia: Chiroptera).** Ando, K. *Cell and Tissue Research*, Feb. 1988, v. 251 (2), p. 345-351. ISSN: 0302-766X.

NAL call no: QH581.A1Z4

Descriptors: anatomy, histology, innervation, cytology, physiology.

**Haematology and iron status of the egyptian fruit bat, Rousettus aegyptiacus.** Westhuyzen, J. van der. *Comparative Biochemistry and Physiology A: Comparative Physiology*, 1988, v. 90 (1), p. 117-120. ref. ISSN:0300-9629.

NAL call no: QP1.C6

Descriptors: blood picture, fruits, diets, iron.

**Modulation of the spontaneous contractions of the initial lymphatics of the bat's wing by arterial and venous occlusion.** Unthank, J.L.; Hogan, R.D. *Blood Vessels*, 1988, v. 25 (3), p. 115-121. ISSN: 0303-6847.

Descriptors: veins, blood flow, wing blood supply, physiology.

**Hematology of the hibernating bat: Myotis daubentonii.** Wolk, E.; Bogdanowicz, W. *Comparative Biochemistry and Physiology A: Comparative Physiology*, 1987, v. 88 (4), p. 637-639. ISSN: 0300-9269.

NAL call no: QP1.C6

Descriptors: Chiroptera, blood, hibernation.

**Temperature sensitivity of cardiac muscarinic receptors in bat atria and ventricle.** O'Shea, J.E. *Comparative Biochemistry and Physiology C*, 1987, v. 86 (2), p. 365-370. ISSN: 0742-8413.

NAL call no: QP901 C6

Descriptors: temperature sensitivity, cardiac muscarinic receptors, atria, ventricle.

**The initial lymphatics as sensors of interstitial fluid volume.** Hogan, R.D.; Unthank, J.L. *Microvascular Research*, May, 1986, v. 31 (3), p. 317-324. ISSN: 0026-2862.

Descriptors: lymph physiology, pressure, extracellular space physiology.

**Andrenergic innervation in the microcirculation of the bat wing.** Fleming, B.F.; McKinney, M.E.

*Microvascular Research*, 1985, v. 29 (3), p. 387-400. ill. ISSN: 0026-2862.

Descriptors: autonomic nervous system, blood vessels, forelimbs.

**Interspecific comparison of subcutaneous tissue fluid pressure in the bat wing.** Bassett, J.E.;

Wiederhielm, C.A.; Hogan, R.D. *Microvascular Research*, Jul. 1985, v. 30 (1), p. 75-79. ISSN: 0026-2862.

Descriptors: body fluids, metabolism, skin metabolism, pressure, wing.

**Autonomic control of heart rate of the bat at low body temperature.** Puccinelli, J.M.; D'Agrosa,

L.S. *Bat Research News*, 1982, v. 23 (4), p. 79. ISSN: 0005-6227.

NAL call no: QL737.C5 B328

Descriptors: body temperature, low, automatic heart rate control, autonomic nervous system, heart rate.

**Autonomic innervation of cerebral blood vessels, especially intraparenchymal capillaries in the domestic fowl and bat.** Tagawa, T. *Microvascular Research*, 1982, v. 24 (2), p. 217-218.

abstract.

Descriptors: animal, anatomy, brain, autonomic nervous system, blood vessels.

**A histochemical study on the innervation of the cerebral blood vessels in bats.** Ando, K. *Cell and*

*Tissue Research*, 1981, v. 217 (1), p. 55-64. ISSN: 0302-766X.

NAL call no: QH581.A1Z4

Descriptors: blood supply, innervation, metabolism, anatomy, histology.

**Plasma oncotic pressure and hematocrit in the intact, unanesthetized bat.** Black, L.L.;

Weiderhielm, C.A. *Microvascular Research*, 1976, v. 12 (1), p. 55-58. ill. ISSN: 0026-2862.

Descriptors: osmotic relations, blood, haematocrit, plasma, plasma osmotic pressure.

**Sensitivity of subcutaneous small arteries and veins to norepinephrine, and epinephrine, and isoproterenol in the unanesthetized bat.** Miller, F.N.; Harris, P.D. *Microvascular Research*,

Nov. 1975, v. 10 (3), p. 340-351. ill. ISSN: 0026-2862.

Descriptors: haemodynamics, blood vesels, subcutaneous small vessels.

**Blood flow through terminal arterial vessels after denervation of the bat wing.** Wiedeman, M.P.

*Circulation Research*, Jan. 1968, v. 22 (1), p. 83-89. ISSN: 0009-7330.

NAL call no: RC681.A1A57137

Descriptors: physiology, pharmacology, blood supply, arteries, blood flow.

**Contractile activity of arterioles in the bat wing during intraluminal pressure changes.** Wiedeman,

M.P. *Circulation Research*, Sep. 1966, v. 19 (3), p. 559-563. ISSN: 0009-7330.

NAL call no: RC681.A1A57137

Descriptors: blood pressure, arteries, denervation, regional blood flow.

## DISEASES / PARASITES

**Bat lyssavirus infections.** McColl, K.A.; Tordo, N.; Aguilar Setien A. *Revue Scientifique et Technique Office International Des Epizooties*, Apr. 2000, v. 19 (1), p. 177-196. ill. ISSN: 0253-1933.

NAL call no: SF781.R4

Descriptors: Chiroptera, transmission of viruses, lyssaviruses, review.

**Ectoparasitic insects of bats in British Columbia, Canada.** Chilton, Glen; Vonhof, Maarten J.; Peterson, B.V.; Wilson, Nixon. *Journal of Parasitology*, Feb. 2000, v. 86 (1), p. 191-192. ISSN: 0022-3395.

NAL call no: 448.8 J824

Descriptors: mammalian hosts, Dipteran parasites, Siphonapteran parasites.

**Ectoparasites observed on northern long-eared bats, *Myotis septentrionalis*.** Sasse, D. Blake; Pekins, Peter J. *Bat Research News*, Fall, 2000, v. 41 (3), p. 69-71. ISSN: 0005-6227.

NAL call no: QL737.C5 B328

Descriptors: parasitology, arthropods, insects, infestation.

**Ithostygnus (Lithostygnus) (Metophthalmus) serripennis Broun (Col.: Latridiidae) from a living bat.** Owen, J.A.; Lane, A.C.; George, R.S. *Entomologist's Record and Journal of Variation*, May-Jun. 2000, v. 112 (3), p. 125-126. ISSN: 0013-8916.

NAL call no: 421 EN89

Descriptors: associations, new record of association with mammals.

**Variation in intensity of a parasitic mite (*Spinturnix myoti*) in relation to the reproductive cycle and immunocompetence of its bat host (*Myotis myotis*).** Christe, Philippe; Arlettaz, Raphael; Vogel, Peter. *Ecology Letters*, May, 2000, v. 3 (3), p. 207-212. ill. ISSN: 1461-023X.

NAL call no: QH540.E262

Descriptors: mammalian hosts, immunocompetence, weight, pregnancy.

**Angiostrongylus cantonensis infection in grey-headed fruit bats (*Pteropus poliocephalus*).**

Radda cliff, L.A.; Bellamy, T.A.; Hartley, W.J., *Australian Veterinary Journal*, Brunswick, Vic. Jul. 1999, v. 77 (7), p. 466-468. ISSN: 0005-0423.

NAL call no: 41.8.Au72

Descriptors: pteropus, parastrongylus cantonensis, outbreaks, treatment, nervous system.

**Cardiopulmonary filariasis in bats (Microchiroptera) in Austria.** Kubber, Heiss Anna; Reifinger, M. *Erkrankungen Der Zootiere*, 1999, v. 39, p. 423-427. ill. ISSN: 0138-5003.

Language: German.

NAL call no: SF996 I5

Descriptors: Nematoda, mammalian hosts, cardiopulmonary filariasis.

**Cranial edema associated with a protein-losing nephropathy in a golden-mantled flying fox (*Pteropus pumilus*).** Deem, Sharon L.; Heard, Darryl J.; Clippinger, Tracy L.; Buergelt, Claus D., *Journal of Zoo and Wildlife Medicine*, Mar. 1999, v. 30 (1), p. 126-131. ISSN: 1042-7260.

NAL call no: SF601 J6

Descriptors: cranial edema, nervous system, disease, protein losing nephropathy.

**Bat feces as an indoor allergen.** Alonso, A.; Iraneta, S.G.; Rodriguez, S.M.; Scavini, L.M.; Rodriguez, S.R. *Journal of Investigative Allergology and Clinical Immunology*, Nov.-Dec. 1998, v. 8 (6), p. 365-369. ISSN: 1018-9068.  
Descriptors: allergens, immunology, feces, housing.

**Bats and rabies.** Austin, C.C. *Journal of the American Veterinary Medical Association*, 1998, v. 213 (9), p. 1323-1325. ref. ISSN: 0003-1488.  
NAL call no: 41.8 AM3  
Descriptors: rabies, zoonoses, disease transmission, pets, disease control.

**Bat rabies - the Israeli experience.** Lichawsky, D.; Perl, S.; Yakobson, B.; Orgad, U. *Israel Journal of Veterinary Medicine*, 1998, v. 53 (4), p. 79-80. ill. ISSN: 0334-9152.  
NAL call no: 41.8 R25  
Descriptors: Chiroptera, viral diseases, rabies, review, biology.

**Clinically silent rabies infection in (zoo) bats.** Ronsholt, L.; Sorensen, K.J.; Bruschke, C.J.M.; Wellenberg, G.J.; Oirschot, J.T.; Johnstone, P.; Whitby, J.E.; Bourhy, H.; Van Oirschot, J.T. *Veterinary Record*, 1998, v. 142 (19), p. 519-520. ref. ISSN: 0042-4900.  
NAL call no: 41.8 V641  
Descriptors: rabies, infection, Chordata, brain, disease transmission.

**Cryptosporidiosis in a bat (*Eptesicus fuscus*).** Dubey, J.P.; Hamir, A.N.; Sonn, R.J.; Topper, M.J., *Journal of Parasitology*, Jun. 1998, v. 84 (3), p. 622-623. ill. ISSN: 0022-3395.  
NAL call no: 448.8.J824  
Descriptors: Cryptosporidium, mammalian hosts, protozoan parasites, Chiroptera.

**Rabies in bats from Oklahoma.** Caire, William. *Proceedings of the Oklahoma Academy of Science*, 1998, v. 78, p. 59-65. ill. ISSN: 0078-4303.  
NAL call no: 500 Ok42  
Descriptors: Chiropteran viral diseased, rabies, literature review.

**Zoonoses and potential zoonoses transmitted by bats.** Hoar, B.R.; Chomel, B.B; Argaex, Rodriguez F. de J.; Colley, P.A.; Rodriguez, F. de J.A. *Journal of the American Veterinary Medical Association*, 1998, v. 212 (11), p. 1714-1720. ref. ISSN: 0003-1488.  
NAL call no: 41.8 AM3  
Descriptors: zoonoses, public health, disease transmission, diseases.

**Generalized AA-amyloidosis in a bat (*Pipistrellus pipistrellus*).** Gruber, A.D.; Linke, R.P. *Veterinary Pathology*, 1996, v. 33 (4), p. 428-430. ref. ISSN: 0300-9858.  
NAL call no: 41.8 P27  
Descriptors: immunochemistry, wounds, amyloidosis.

**Genomic analysis and nucleotide sequence of M and S RNA segment of Hantaan-like virus from bat.** Jung, Yong Tae; Lee, Sun Ryang; Kim, Gum Ryong; Jung, Y.T.; Lee, S.R.; Kim, G.R. *Journal of the Korean Society for Microbiology*, 1996, v. 31 (1), p. 103-110. ref.  
Descriptors: nucleotide sequences, RNA, genome analysis, molecular genetics.

- Helminth parasites of bats, Mormoopidae and Phyllostomidae, from the Estacion de Biologia Chamela, Jalisco State, Mexico.** Garcia, Vargas Fernando; Osorio, S.D.; Perez, Ponce De Leon G. *Bat Research News*, 1996, v. 37 (1), p. 7-8. ISSN: 0005-6227.  
NAL call no: QL737.C5 B328  
Descriptors: helminths, Chordata, Mammalia, parasitology.
- Multicentric hyperostosis consistent with flurosis in captive fruit bats (*Pteropus giganteus*, *P. poliocephalus*, and *Rousettus aegyptiacus*).** Duncan, M.; Crawshaw, G.J.; Mehren, K.G.; Pritzker, K.P.H.; Mendes, M.; Smith, D.A. *Journal of Zoo and Wildlife Medicine*, 1996, v. 27 (3), p. 325-328. ref. ISSN: 1042-7260.  
NAL call no: SF601 J6  
Descriptors: hyperostosis, diagnosis, flurosis, bone diseases, nutritional disorders.
- Multicentric malignant lymphoma in a pallid bat.** Andreasen, C.B.; Duimstra, J.R. *Journal of Wildlife Diseases*, 1996, v. 32 (3), p. 545-547. ref. ISSN: 0090-3558.  
NAL call no: 41.9 W64B  
Descriptors: neoplasms, case reports, histology, lymphoma, diagnosis.
- Multicentric malignant lymphoma in a pallid bat.** Andreasen, C.B.; Duimstra, J.R., *Journal of Wildlife Diseases*, Jul. 1996, v. 32 (3), p. 545-547. ISSN: 0900-3558.  
NAL call no: 41.9.W64B  
Descriptors: neoplastic diseases, multicentric malignant lymphoma, case report.
- Renal coccidioidosis with cystic tubular dilatation in four bats.** Gruber, A.D.; Schulze, C.A.; Brugmann, M.; Pohlenz, J. *Veterinary Pathology*, 1996, v. 33 (4), p. 442-445. ref. ISSN: 0300-9858.  
NAL call no: 41.8 P27  
Descriptors: coccidioidosis, kidneys, diagnosis, histopathology, parasites.
- Genomic characterization of M and S RNA segments of Hantaviruses isolated from bats.** Jung, Y.T.; Kim, G.R. *Acta Virologica*, 1995, v. 39 (4), p. 231-233. ISSN: 0001-723X.  
NAL call no: 448.3 Ac85  
Descriptors: biochemistry, ecology, molecular biophysics, genetics, microbiology.
- Microfilaria sundaicus sp. n., a Chabfilaria-like parasite (Filarioidea: Onchocercidae) from the blood of the horseshoe bat (*Rhinolophus affinis*) in Flores, Indonesia.** Purnomo; Bangs M.J. *Journal of the Helminthological Society of Washington*, 1995, v. 62 (1), p. 32-34. ref. ISSN: 1049-233X  
NAL call no: QL392.J68  
Descriptors: blood, new species, parasites helminths.
- On four digenetic trematodes of bats from China (Trematoda: Lecithodendriidae).** Qu, Fy; Gong, J.P. *Acta Parasitologica*, 1994, v. 39 (1), p. 5-8. ref.  
NAL call no: QL757 A27  
Descriptors: taxonomy, synonyms, nomenclature, parasites.
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NAL call no: RC117.M9  
Descriptors: blood, lymphatics, infection, digestive system, kidney, liver.

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NAL call no: 41.8 V641

Descriptors: bacterial diseases, microbial flora, Chiroptera.

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NAL call no: QL757 P377  
Descriptors: isoenzymes, chemotaxonomy, zymodemes, parasites, protozoa.

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**Cobalamin deficiency and the pathogenesis of nervous system diseases.** Metz, J. *Annual Review of Nutrition*, 1992, p. 1259-1279. ISSN: 0199-9885.

NAL call no: QP141.A1A63  
Descriptors: nervous system diseases, etiology, vitamin B12 deficiency.

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Descriptors: hosts, ectoparasites, wild animals.

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NAL call no: 421.J828  
Descriptors: macronyssidae, biometry, morphology, parasites, new genus.

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NAL call no: 436.8 W63  
Descriptors: helminths, parasites.

**The role of positive and negative interspecific associations in the organization of communities of intestinal helminths of bats.** Lotz, J.M.; Font, W.F. *Parasitology*, 1991, v. 103 (2), p. 127-138. ref. ISSN: 0031-1820.

NAL call no: 448.8 P21  
Descriptors: ecology, helminths, immunity, parasites, Chiroptera.

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Descriptors: ectoparasites, hosts, sampling, traps, CO<sub>2</sub>, bait.

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Descriptors: new species, Taxonomy, morphology, parasites.

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NAL call no: QL737 C52N38 1988

Descriptors: parasites, reviews, hosts, helminths, ectoparasites.

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Descriptors: transmission, vectors, parasites, disease.

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Descriptors: Nematoda, mammalian hosts, Chiroptera, host parasite relationships.

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Descriptors: parasites, Trypanosoma, immunology.

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Descriptors: immunoglobulin, classes, role, histoplasmosis.

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Descriptors: parasites, helminths.

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NAL call no: 41.8 AM3

Descriptors: drug therapy, anthelmintics, parasites, helminths,

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Descriptors: descriptions, new species, keys.

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NAL call no: 448.8 Am326

Descriptors: immune responses, fungal disease, Histoplasma capsulatum.

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NAL call no: 448.8 Am326

Descriptors: Microchiroptera, protozoan parasites, Trypanosoma.

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Descriptors: histology, parasites, disease.

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W.H.R.; Evans, D.A. (eds.), v. 1, 1976, p. 175-216. Academic Press Inc. London, UK.

NAL call no: QL368 K5B5

Descriptors: biology, reviews, life history, parasites.

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NAL call no: 470 C16D

Descriptors: new species, morphology, parasites, helminths.

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Descriptors: dwellings, parasites, mite, dermatitis.

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Descriptors: helminths, parasites, Chiroptera.

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Descriptors: parasites, vectors, pathogens, diseases, entomology.

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NAL call no: QR301 S9  
Descriptors: transmission, yellow fever, disease transmission, mosquitos.

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Descriptors: helminths, parasites, Chiroptera.

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Descriptors: experimental infection, fungal disease, humoral and cell mediated immunity.

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Descriptors: lead poisoning, captive wild animals.

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NAL call no: 448.8 Am326  
Descriptors: immune response, virus infection, environmental temperatures.

## ENRICHMENT

**Mealworm dispensers as environmental enrichment for captive Rodrigues fruit bats (Pteropus rodricensis).** O'Connor, K.I., *Animal Welfare*, Wheathampstead, U.K.: Universities Federation for Animal Welfare, 2000, v. 9 (2), p. 123-137. ISSN: 0962-7286.

NAL call no: HV4701.A557

Descriptors: Pteropus, enrichment, feeding behavior, foraging, feed dispensers.

**Bat enrichment survey.** LeBlanc, Dana. *Animal Keepers' Forum*, Jul. 1999, v. 26 (7), p. 267-285. ill. ISSN: 0164-9531.

NAL call no: QL77.5 A54

Descriptors: Chiroptera, enrichment provisions in captivity, care in captivity, survey.

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NAL call no: SF408.45.A44 1999

Descriptors: zoo animals, environmental enrichment, housing, handbooks.

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NAL call no: QL77.5 A54

Descriptors: Chiroptera, enrichment in captivity, care in captivity, international survey.

**“Grenades” for bats.** Chag, Mark, *Zoos' Print*, The Lubee Foundation Inc., Gainesville, FL, Oct. 1999, v. 1-14 (1-10), p. 20. ill. ISSN: 0971-6378.

Descriptors: care in captivity, feeding grenade, enrichment.

**Horticultural options for fruit bat enrichment.** Leblanc, Dana, *Anon.* Proceedings of the 1998 joint conference AAZK, EMA, AZH, Indianapolis, IN. Zoological Society, Inc., 1998, p. 1-286. Chapter pagination: 205-212. Ill.

Descriptors: care in captivity, horticultural enrichment, food, plants.

**Social and behavioral well-being of captive bats.** Johnston, Dave S., *Journal of Wildlife Rehabilitation*, Spring, 1997, v. 20 (1), p. 15-18. ill. ISSN: 1071-2232.

NAL call no: SF996.45.J69

Descriptors: Chiroptera, care in captivity, housing techniques, environmental enrichment.

## FEEDING / NUTRITION / METABOLISM.

**Advances in fruit bat nutrition.** Dempsey, Janet L., Fowler, Murray E. & Miller, R. Eric, *Zoo and Wild Animal Medicine: Current Therapy*. 4<sup>th</sup> ed. W.B. Saunders Company, Philadelphia. 1999, i-xxiii, p. 1-747. Chapter pagination: 354-360. ill. ISBN: 0721686648.

NAL call no: SF996 Z66

Descriptors: diet in captivity, dietary formulation, dietary requirements.

**Bat salivary proteins segregate according to diet.** Dumont, E.R.; Etzel, K.; Hempel, D. *Mammalia*, 1999, v. 63 (2), p. 159-166. ill. ISSN: 0025-1461.

NAL call no: 410 M31

Descriptors: diet, salivary glands, diet relationships, proteins.

**Comparative analysis of the digestive efficiency and nitrogen and energy requirements of the phyllostomid fruit-bat (*Artibeus jamaicensis*) and the pteropodid fruit-bat (*Rousettus aegyptiacus*). Delorme, M.; Thomas, D.W. *Journal of Comparative Physiology B: Biochemical, Systemic and Environmental Physiology*, Mar. 1999, v. 169 (2), p. 123-132. ill. ISSN: 0174-1578.**

NAL call no: QP33 J681

Descriptors: biochemistry, energy intake, energy requirements, dietary requirements.

**The diets of bats from southeastern Brazil: The relation to echolocation and foraging behavior.**

Brock, Fenton M.; Whitaker, J.O. Jr.; Vonhof, M.J.; Waterman, J.M.; Pedro, W.A.; Aguiar, L.M.S.; Baumgarten, J.E.; Bouchard, S.; Faris, D.M.; Portfors, C. V.; Rautenbach, N.I.L.; Scully, W.; Zortea, M. *Revista Brasileira de Zoologia*, 1999, v. 16 (4), p. 1081-1085. ref.

NAL call no: QL242 R48

Descriptors: foraging, faeces, prey, diet, feeding behavior.

**The effect of food hardness on feeding behavior in frugivorous bats (Phyllostomidae): An experimental study.** Dumont, Elizabeth R., Jun.1999, *Journal of Zoology*, London. v. 248 (2), p. 219-229. ill. ISSN: 0952-8369.

NAL call no: QL1 J68

Descriptors: food hardness effects on feeding behavior, captive study.

**Field metabolic rates and water uptake in the blossom bat, *Syconycteris australis***

(Megachiroptera). Geiser, F.; Coburn, D.K. *Journal of Comparative Physiology B: Biochemical, Systemic and Environmental Physiology*, Mar. 1999, v. 169 (2), p. 133-138. ISSN: 0174-1578.

NAL call no: QP33 J681

Descriptors: ambient temperatures, water uptake, field metabolic rate.

**Diets of juvenile, yearling, and adult big brown bats (*Eptesicus fuscus*) in southeastern Alberta.**

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NAL call no: 410 J823

Descriptors: diets, insects, juvenile, yearling, adult.

**Diet selection and resource use by flying foxes (genus *Pteropus*).** Banack, A. *Ecology*, 1998, v. 79 (6), p. 1949-1967. ref.

NAL call no: 410 EC7

Descriptors: fruits, pollinators, seed dispersal, feeding behavior.

**Dietary strategies of Old World Fruit Bats (Megachiroptera, Pteropodidae): How do they obtain sufficient protein?** Courts, S.E. *Mammal Review*, 1998, v. 28 (4), p. 185-194. ISSN: 0305-1838.

NAL call no: QL700.M24

Descriptors: diets, proteins, foraging behavior.

**Food and feeding habits of the fruit-eating bat *Carollia perspicillata*.** Quesnel, Victor C. *Living World*, 1997-1998, 1998, p. 28-30. ill. ISSN: 1029-3299.  
Descriptors: food plants, food handling, nocturnal activity, fruit, light.

**The hunting techniques of bats.** Garrido- Garcia, Jose Antonio. *Quercus*, Aug. 1998, v. 150, p. 41-45, ill. ISSN: 0212-0054.  
Descriptors: Chiroptera, habitat management, food capture, diet, foraging.

**Pollen digestion by New World bats: Effects of processing time and feeding habits.** Gerardo, Herrera M.L.; Martinez Del Rio, Carlos. *Ecology*, (Washington DC), Dec. 1998, v. 79 (8), p. 2828-1838. ill. ISSN: 0012-9658.  
NAL call no: 410.EC7  
Descriptors: food plants, Chiroptera, enzymes, digestion.

**Methods for diet study in insectivorous bats.** Kervyn, Thierry. *Arvicola Actes "Amiens 97"*, 1998, p. 53-56. ill. ISSN: 0758-5721.  
Language: French.  
Descriptors: Chiroptera, literature review, feeding analysis techniques, diet analysis methods.

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NAL call no: QL700.M24  
Descriptors: diets, foraging behavior, Chiroptera.

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NAL call no: QL1 J68  
Descriptors: food organisms, morphology, food selection.

**The diets of two phonic types pf the bat *Pipistrellus pipistrellus* in Britain.** Barlow, Kate E. *Journal of Zoology*, London, Nov. 1997, v. 243 (3), p. 597-609. ISSN: 0952-8369.  
NAL call no: QL1 J68  
Descriptors: dietary difference, habitat use, prey composition.

**Temperature regulation and metabolism of an Australian bat, *Chalinolobus gouldii* (Chiroptera: Vespertilionidae) when euthermic and torpid.** Hosken, D.J.; Withers, P.C. *Journal of Comparative Physiology B: Biochemical, Systemic and Environmental Physiology*, 1997, v. 167 (1), p. 71-80. ISSN: 0174-1578.  
NAL call no: QP33 J681  
Descriptors: endothermy, metabolic rate, metabolism, temperature regulation.

**Multicentric hyperostosis consistent with fluorosis captive fruit bats (*Pteropus giganteus*, *P. poliocephalus*, and *Rousettus aegyptiacus*).** Duncan, Mary; Crawshaw, Graham J.; Mehren, Kay G.; Pritzker, Kenneth P.H.; Mendes, Maria; Smith, Dale A., *Journal of Zoo and Wildlife Medicine*, 1996, v. 27 (3), p. 325-338. ISSN: 1042-7260.  
NAL call no: SF601 J6  
Descriptors: metabolism, nutrition, veterinary medicine, skeletal system.

**Bioaccumulation of selected organochlorines in bats and tits: Influence of chemistry and biology.**

Streit, B.; Winter, S.; Nagel, A. *Environmental Science and Pollution Research International*, 1995, v. 2 (4), p. 194-199. ref.

Descriptors: nontarget effects, insecticides, residues.

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NAL call no: 410 J823

Descriptors: food consumption, food organisms, food selection.

**Nectarivorous feeding mechanisms in bats.** Freeman, P.W. *Biol. J. Linn. Soc.*, 1995, v. 56 (3), p. 439-

463. ISSN: 0024-4066.

NAL call no: QH301.B56

Descriptors: Chiroptera, nectivory, feeding behavior, functional morphology.

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NAL call no: 470 C16D

Descriptors: essential fatty acids, prey, body fat, diets, feeding behavior.

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NAL call no: S960 W5

Descriptors: diets, feeding behavior, prey, predation.

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C.E.; Barclay, R.M.R *Journal of Mammalogy*, 1994, v. 75 (2), p. 394-398. ISSN: 0022-2372.

NAL call no: 410 J823

Descriptors: diets, age.

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NAL call no: QH540.F85

Descriptors: food selection, foliage, energetics, fractionation.

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NAL call no: S960 W5

Descriptors: digestive system, pollution, toxicology, lead.

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NAL call no: Q33 C5

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Descriptors: diets, pregnancy, nutritive value.

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NAL call no: 470 C16D  
Descriptors: nutrition, predation, prey, digestion, biology.

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Descriptors: fatty acids, cobalamin, metabolism, neuropathy, deficiency.

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Descriptors: vitamin B12, diet therapy, blood, metabolism, complications.

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Descriptors: physiology, demyelinating diseases, spinal cord diseases.

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NAL call no: 470 C16D  
Descriptors: foraging behavior, ecology, animal eating bats.

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Descriptors: prey selection, big grown bats.

**Analysis of the diet of the lesser horseshoe bat, *Rhinolophus hipposideros*, in the west of Ireland.** McAney, C.M.; Fairley, J.S. *Journal of Zoology*, 1989, v. 217 (3), p. 491-498.

NAL call no: QL1 J68

Descriptors: diets, food organisms, seasonal variation.

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NAL call no: QL751.B4

Descriptors: reproductive condition, foraging behavior, female, effect.

**Feeding ecology of Tasmanian bat assemblages.** O'Neil, M.G.; Taylor, R.J. *Australian Journal of Ecology*, Mar. 1989, v. 14 (1), p. 19. ISSN: 0307-692X.

NAL call no: QH540.A8

Descriptors: feeding ecology, Tasmanian bat.

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NAL call no: QL751.B4

Descriptors: behavior, sociobiology.

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NAL call no: QH540 T74

Descriptors: foraging ecology, audition, echolocating.

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Descriptors: feeding behavior.

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NAL call no: 470 C16D

Descriptors: head size, foraging behavior, animal eating bats.

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NAL call no: QL737.C5E3

Descriptors: diets, frugivores, food selection, analysis, nectarivores, Chiroptera.

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NAL call no: QL737.C5E3

Descriptors: techniques, predators, prey, biology, ecology, research.

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Descriptors: analysis, nectarivores, frugivores, nutrition, Chiroptera.

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Descriptors: feeding behavior, foraging, captive fruit bats.

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NAL call no: QL751.B4

Descriptors: foraging behavior, echolocation, horseshoe bat.

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NAL call no: QP1.C6

Descriptors: metabolism, disease models, nervous system.

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NAL call no: 470 C16D

Descriptors: foraging, habitat use, insectivorous bats.

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*Canadian Journal of Zoology*, Dec. 1986, v. 64 (12), p. 2860. ISSN: 0008-4301.

NAL call no: 470 C16D

Descriptors: roosting and foraging behavior, comparison.

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Descriptors: vitamin B-12 deficiency, DNA, synthesis.

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Descriptors: captive insectivorous bats, feeding, food colonies.

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NAL call no: 410 P56

Descriptors: Pteropodidae, energetics, food intake, diets, fruits.

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Descriptors: diet in captivity, reconstituted freeze-dried blood, palatability.

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NAL call no: 389.8.J82  
Descriptors: fatty acids, myelin, spinal cord, vitamin B-12 deficiency.

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Descriptors: echolocation, predatory behavior, feeding behavior, foraging.

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Descriptors: cobalamin analogs in plasma, nervous system, liver, gases, neurological changes, nitrous oxide.

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Descriptors: vitamin B-12, inactivation, nitrous oxide, methionine, Chiroptera.

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Descriptors: diets, food sources.

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Descriptors: iron balance, vampire bat.

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Descriptors: techniques, care in captivity, feeding on prey.

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Descriptors: nerve regeneration, nerve degeneration, synapses, organic chemicals.

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Descriptors: lipids, brain, vitamin B-12.

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Descriptors: nerves, endings, Amino acids, neurotransmitters, dietary deficiency.

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NAL call no: 470 C16D  
Descriptors: feeding behavior, echolocation.

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NAL call no: 398.8.B773  
Descriptors: DNA, vitamin B-12.

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Descriptors: folic acid, vitamin B-12.

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Descriptors: feeding behavior, echolocation, four species, *Myotis*.

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Descriptors: diets, Chiroptera.

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Descriptors: food location, analysis, behavior,

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Descriptors: neurological changes, vitamin B12. deficiency.

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Descriptors: Chiroptera, digestive enzymes, diet, feeding behavior, digestive system.

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Descriptors: bats, dietary deficiency.

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NAL call no: 410 J823  
Descriptors: food intake, captive, bats.

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NAL call no: 410 M31  
Descriptors: feeding, natural conditions, laboratory conditions, interactions.

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NAL call no: 410 J823.  
Descriptors: feeding capacities, excretory functions, vampire bats.

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NAL call no: 410 J823.  
Descriptors: seasonal food changes, captivity, bat, temperature.

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Descriptors: vampire bats, cannibalism, captivity.

**Raising the young of red bats on artificial diet.** Gates, W.H. *Journal of Mammalogy*, 1938, v. 19, p. 461-464.  
NAL call no: 410 J823  
Descriptors: young red bats, artificial diet.

## HISTOPATHOLOGY / IMMUNOHISTOCHEMISTRY

**An immunohistochemical study of gut endocrine cells in piscivorous bat (Chiroptera: Noctilio leporinus).** Komori, Manabu; Taddei, Valdir A.; Hondo, Eiichi; Kitamura, Nobuo; Pai, Vitalino D.; Choliq, Chairun N.; Yamada, Junzo. *Japanese Journal of Zoo and Wildlife Medicine*, Mar. 2000, v. 5 (1), p. 45-54. ill. ISSN: 1342-6133.  
Descriptors: digestive system, endocrine cells, gut, types, endocrine system.

**Histopathology and Immunohistochemistry of bats infected by Australian bat lyssavirus.** Hooper, P.T.; Fraser, G.C.; Foster, R.A.; Storie, G.J. *Australian Veterinary Journal*, Sept. 1999, v. 77 (9), p. 595-599. ISSN: 0005-0423.  
NAL call no: 41.8.AU72  
Descriptors: Australian bat lyssavirus infection, histopathology, immunohistochemistry.

**Histochemical and electrophoretic analysis of the primary flight muscle of several phyllostomid bats.** Hermanson, John W.; Ryan, James M.; Cobb, Matthew A.; Bentley, Jacqueline; Schutt, William A. Jr. *Canadian Journal of Zoology*, Nov. 1998, v. 76 (11), p. 1983-1992. ill. ISSN: 0008-4301.

NAL call no: 470 C16D

Descriptors: skeletal musculature, proteins, biochemical variation, Phyllostomidae.

**Pathologies presented in two captive bat colonies related to problems with air exchange.** Paredes, Jorge; Paras, Garcia Alberto, *American Association of Zoo Veterinarians Annual Conference Proceedings*, 1996, p. 440-442. *Zoological Record*, v. 134, Sect. 19.

NAL call no: 410 Z73

Descriptors: housing techniques, diseases and disorders, pathologies, air exchange.

**Some histological and histochemical observations on the fundic gland region of the stomach of insectivorous (*Hipposideros diadema*) and frugivorous (*rousettus amplexicaudatus*) bats.** Guico, G.B.; Maala, C.P. *Philippine Journal of Veterinary Medicine*, 1994, v. 31 (2), p. 48-52. ref. ISSN: 0031-7705.

NAL call no: 41.8 P53

Descriptors: glands, histology, histochemistry, digestion, digestive tract.

**Histochemical and biochemical plasticity of muscle fibers in the little brown bat, *Myotis lucifugus*.**

Brigham, R.M.; Ianuzzo, C.D.; Hamilton, N.; Fenton, M.B. *Journal of Comparative Physiology B*, 1990, v. 160 (2), p. 183-186. ISSN: 0174-1578.

NAL call no: QP33 J681

Descriptors: muscle fibers, plasticity.

**Immunocytochemical studies on the pituitary pars distalis of the Japanese long-fingered bat,**

***Miniopterus schreibersii fuliginousus*.** Mikami, S.; Chiba, S; Hojo, H.; Taniguchi, E.; Kubokawa, K.; Ishii, S. *Cell and Tissue Research*, Feb. 1988, v. 251 (2), p. 291-299. ISSN: 0302-766X.

NAL call no: QH581.A1Z4

Descriptors: anatomy, histology, metabolism, pituitary gland, hormones.

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NAL call no: QH581.A1Z4

Descriptors: Miniopterus, Murina, Vespertilio, blood vessels, cerebral, innervation.

**Histoenzymological mapping of alkaline phosphatase and 5-nucleotidase in the medulla oblongata of a microchiropteran bat, *Taphozous melanopogon* Temminck.** Hafiza, B.; Sood, P.P. *Brain Research Bulletin*, Jul.-Aug. 1979, v. 4 (4), p. 467-474. ISSN: 0361-9230.

Descriptors: brain mapping, alkaline phosphatase metabolism.

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B.N. *The Indian Journal of Medical Research*, Feb. 1971, v. 59 (2), p. 259-264. ISSN: 0971-5916.

NAL call no: 448.8 In22

Descriptors: anatomy, histology, stomach, Chiroptera.

## INTESTINAL

**Gastric digestive proteinases of the greater horseshoe bat, *Rhinolophus ferrumequinum*.** Narita, Yuichi; Oda, Sen Ichi; Takenaka, Osamu; Kageyama, Takashi. *Mammal Study*, Jun. 2000, v. 25 (1), p. 17-26. ill. ISSN: 1343-4152.  
Descriptors: enzymes, digestion, gastric digestive proteinases.

**An immunohistochemical study of gut endocrine cells in piscivorous bat (*Chiroptera Noctilio leporinus*).** Komori, Manabu; Taddei, Valdir A.; Hondo, Eiichi; Kitamura, Nobuo; Pai, Vitalino D.; Choliq, Chairun; Yamada, Junzo. *Japanese Journal of Zoo and Wildlife Medicine*, Mar. 2000, v. 5 (1), p. 45-54. ill. ISSN: 1342-6133.  
Descriptors: digestive system, endocrine cells, endocrine system, types.

**An immunohistochemical study of gut endocrine cells in nectarivorous and frugi-nectariverous phyllostomid bats (Chiroptera: *Anoura caudifer* and *Carollia perspicillata*).** Ashihara, Nagatoshi; Taddei, Valdir A.; Hondo, Eiichi; Kitamura, Nobuo; Pai, Vitalino D.; Campos, Valencio J.D.M.; Choliq, Chairun N.; Yamada, Junzo. *Japanese Journal of Zoo and Wildlife Medicine*, Sept. 1999, v. 4 (2), p. 125-133. ISSN: 1342-6133.  
Descriptors: dietary range, gut endocrine cell frequency, gut, digestive system.

**The morphology of the intestine of the entomophagous longfingered bat, *Miniopterus inflatus*: Mucosal topography and possible landmarks.** Makanya, A.N., *Acta Biologica Hungarica*, 1997, v. 48 (1), p. 15-27. ISSN: 0236-5383.  
Descriptors: intestine, digestive system, landmarks, morphology, microscopy.

**Salivary pH and buffering capacity in frugivorous and insectivorous bats.** Dumont, Elizabeth R., *Journal of Mammalogy*, Nov. 1997, v. 78 (4), p. 1210-1219. ill. ISSN: 0022-2372.  
NAL call no: 410 J823  
Descriptors: food, salivary glands, salivary pH & buffering capacity.

**Normal bat flora.** Simpson, V.R., *Veterinary Record*, UK, 1994, v. 135 (20), p. 487-488. ISSN: 0042-4900.  
NAL call no: 41.8.V641  
Descriptors: microbial flora, intestines, microorganisms, bacterial diseases.

**Normal bat flora.** Smith, W. *Veterinary Record*, UK, 1994, v. 135 (16), p. 388. ISSN: 0042-4900.  
NAL call no: 41.8.V641  
Descriptors: microorganisms, intestines, microbial flora, diseases.

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NAL call no: 442.8 J8222

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NAL call no: QL77.5 Z6

Descriptors: melengesterol, contraceptives, bats.

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Descriptors: behavior, biophysics, endocrine system, reproductive system.

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Descriptors: sperm storage in uterus, ovary, histology, hibernation, sperm.

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NAL call no: 442.8 J8222  
Descriptors: ovarian function, black mastiff bat.

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Descriptors: placenta and fetal membranes, lesser yellow house bat.

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Descriptors: embryology, delayed development, influencing factors.

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Descriptors: morphology epithelial cells, sperm storage.

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NAL call no: 447.8 AM32

Descriptors: morphology, thyroid cells.

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Descriptors: biometrics, digestion, nutrition, energy requirements, growth rate.

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NAL call no: 442.8 J8222

Descriptors: receptivity, male, female, spermatozoa.

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Descriptors: care in captivity, hand rearing, techniques.

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Descriptors: ovulation, embryonic development, timing.

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NAL call no: 448.8 J8293  
Descriptors: sex steroid-binding protein, thyroxine levels, plasma.

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Descriptors: prolonged sperm storage, implications.

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Descriptors: metabolic strategies, reproduction.

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NAL call no: QL1.Z68  
Descriptors: morphology, fuzz filaments, spermatozoa.

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NAL call no: 410 Au73  
Descriptors: reproduction, seasonal functions, breeding season, sexual maturation.

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NAL call no: QL876.B5  
Descriptors: variations, sex-steroid binding protein, testosterone, bat.

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NAL call no: QL876.B5

Descriptors: plasma, sex steroid binding protein, thyroxine, effect on plasma proteins.

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NAL call no: 442.8 J8222

Descriptors: Graafian follicle, survival, fertilization.

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## RESEARCH / BIOMEDICAL

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Descriptors: DNA, hybridization, enriched tracers.

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Descriptors: plasminogen, activators, fragment E.

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Descriptors: metabolism, drug effects, pharmacology, physiology.

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NAL call no: 410 J823

Descriptors: general morphology, karyotype, phylogeny, zoogeography.

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NAL call no: QL1 J68

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Descriptors: brain, echolocation, superior colliculus, sensorimotor integration.

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Descriptors: vasopressin, nervous system, brain, habenula, posterior pituitary.

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Descriptors: antagonists, inhibitors, chemistry, metabolism, pharmacology.

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Descriptors: chromosomes, analysis, Asellia, Pipistrellus, Rhinopoma, Rousettus, Tadarida, Chiroptera.

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Descriptors: genetics, nucleic acid, repetitive sequences.

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Descriptors: GABA chemistry, anatomy, histology, ultrastructure.

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NAL call no: 410 J823

Descriptors: gene flow, genetic variance, gene pool, population structure.

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**fruit bat, Cynopterus brachyotis (Megachiroptera, Pteropodidae).** Sharma, R.S.K.;

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NAL call no: 410 J823

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Descriptors: biology, zoology, symposium.

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NAL call no: QP33.J68

Descriptors: behavior, echoacoustical information, sense organs, visual information.

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NAL call no: SF604 V485

Descriptors: challenge strain, methodology, virology, microbiology.

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Descriptors: bleeding potential, salivary plasminogen, tissue plasminogen.

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Gulba, D.C.; Praus, M.; Witt, W. *Fibrinolysis*, 1995, v. 9 (Suppl. 1), p. 91-96. ISSN: 0268-9499.

Descriptors: drug trials, fibrin, saliva, plasminogen activators.

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NAL call no: QH442.J69

Descriptors: fibrinolytic agents, plasmids, recombinant proteins.

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NAL call no: 381 J824

Descriptors: fibrin metabolism, isoenzymes, plasminogen activators metabolism.

**Vampire bat salivary plasminogen activator evokes minimal bleeding relative to tissue-type plasminogen activator as assessed by a rabbit cuticle bleeding time model.** Mellott, M.J.; Ramjit, D.R.; Stabilito, I.I.; Hare, T.R.; Senderak, E.T.; Lynch, J.J.; Gardell, S.J. *Thrombosis and Haemostasis*, Mar. 1995, v. 73 (3), p. 478-483. ISSN: 0340-6245.

Descriptors: fibrin metabolism, bleeding time, factor VIII, pharmacology.

**Aerodynamic correction for the flight of birds and bats in wind tunnels.** Rayner, J.M.V. *Journal of Zoology*, 1994, v. 234 (4), p. 537-563. ISSN: 0952-8369.

NAL call no: QL1 J68

Descriptors: flight, aerodynamics, properties, Chiroptera, Aves.

**Autoradiographic quantification of muscarinic cholinergic synaptic markers in bat, shrew, and rat brain.** Albin, Roger L.; Howland, Morgan M.; Higgins, Donald S.; Frey, Kirk A.

*Neurochemical Research*, 1994, v. 19 (5), p. 581-589. ISSN: 0364-3190.

NAL call no: QP356.3 N457

Descriptors: metabolism, nervous system, pharmacology.

**Fine structure of the XY body in the XY1Y2 trivalent of the bat *Artibeus lituratus*.** Solari, A.J.;

Pigozzi, M.I. *Chromosome Research*, Jan. 1994, v. 2 (1), p. 53-58. ill. ISSN: 0967-3849.

NAL call no: QH600.C47

Descriptors: Chromosomes, meiosis, XY body formation.

**Guidelines for recording bats.** Richardson, Phil; Sargent, Gillie. *Bat Conservation Trust*, London, 1994, P. 1-26. ill.

Descriptors: Chiroptera, activity recording, information handling, guidelines.

**Karyosystematics of plecotine bats: A reevaluation of chromosomal data.** Volleth, M; Herller, K.G. *Journal of Mammalogy*, 1994, v. 75 (2), p. 416-419. ISSN: 0022-2372.

NAL call no.: 410 J823

Descriptors: karyosystematics, reevaluation, chromosomes-07389.

**Karyotypes and Ag-NOR variations in Japanese vespertilionid bats (Mammalia: Chioptera).** Ono, T.; Obara, Y. *Zool. Sci.*, 1994, v. 11 (3), p. 473-484. ISSN: 0289-0003.

NAL call no: QL1.Z68

Descriptors: karyotypes, Myotis, chromosomes, genetics, Chiroptera.

**A new technique for marking bats.** Gannon, Michael R. *Bat Research News*, 1993, v. 34 (4), p. 88. ISSN: 0005-6227.

NAL call no: QL737.C5 B328

Descriptors: identification, capture mark recapture, field method.

**Genetic differentiation in Philippine bats of the genera Cynopterus and Haplonycteris.** Peterson, A.T.; Heaney, L.R. *Biol. J. Linn. Soc.*, 1993, v. 49 (3), p. 203-218. ISSN: 0024-4066.

NAL call no: QH301.B56

Descriptors: genetic variance, isoenzymes, population studies, genetic distance.

**Histochemical and ultrastructural investigation of heterogenous Purkinje neurons in mammalian cerebellum.** Khan, M.A. *Cellular and Molecular Biology Research*, 1993, v. 39 (8), p. 789-795. ISSN: 0968-8773.

NAL call no: QH506.C47

Descriptors: Purkinje cells metabolism, ultrastructure, histochemistry.

**Spontaneous contractions of isolated bat wing venules are inhibited by luminal flow.** Davis, Michael J. *American Journal of Physiology*, 1993, v. 264 (4 Part 2), H1174-H1186. ISSN: 0002-9513.

NAL call no: 447.8 Am3

Descriptors: cardiovascular system, endocrine system, integumentary system.

**Ultrastructural similarity between bat and human mast cell secretory granules.** Oliani, Sonia Maria; Vugman,Ithamar; Jamur, Maria Celia. *International Archives of Allergy and Immunology*, 1993, v. 100 (3), p. 230-233. ISSN: 1018-2438.

NAL call no: RC583.I57

Descriptors: cell biology, morphology, biochemistry and molecular biophysics.

**Vampire bat salivary plasminogen activator.** Gardell, S.J.; Friedman, P.A. *Methods in Enzymology*, 1993, 223233-49. ISSN: 0076-6879.

NAL call no: QP601 M49

Descriptors: fibrinolysis, plasminogen activators, saliva enzymology.

**Fatty acid composition of synaptosomes from normal and cobalamin deficient bat brain.**

Westhuyzen, J. van der; Lashansky, G.; Cantrill, R.C. *Comparative Biochemistry and Physiology B*. 1992, v. 73 (2), p. 297-299. ref. ISSN: 0305-0491.

NAL call no: QP501.C6

Descriptors: fatty acids, brain, vitamin B12, deficiency.

**The functional significance of ventilation frequency and its relationship to oxygen demand in the resting brown long-eared bat, Plecotus auritus.** Webb, P.I.; Hays, G.C.; Speakman, J.R.;

Racey, P.A. *Journal of Comparative Physiology B: Biochemical, Systematic and Environmental Physiology*, v. 162 (2), p. 144-147. 1992. ISSN: 0174-1578.

NAL call no: QP33 J681

Descriptors: oxygen demand, ventilation frequency, relationship.

**High-level secretion of the four salivary plasminogen activators from the vampire bat, Desmodus rotundus, by stably transfected baby hamster kidney cells.** Kratzschmar, J.; Haendler, B.;

Bringmann, F.; Dinter, H.; Hess, H.; Donner, P.; Schleuning, W.D. *Gene*, Jul. 15, 1992, v. 116 (2), p. 281-284. ISSN: 0378-1119.

NAL call no: QH442.A1G4

Descriptors: plasminogen activators, genetics, DNA, kidney physiology.

**Plasminogen activators from the saliva of Desmodus rotundus (common vampire bat): Unique fibrin specificity.** Schleuning, W.D.; Alagon, A.; Boidol, W.; Bringmann, P.; Petri, T.;

Kratzschmar, J.; Haendler, B.; Langer, G.; Baldus, B.; Witt, W.; et-al. *Annals of the New York Academy of Sciences*, Dec. 4, 1992, 667:395-403. ISSN: 0077-8923.

NAL call no: 500 N484

Descriptors: fibrinolysis, drug effects, saliva chemistry.

**Projections to the medial superior olive from the medial and lateral nuclei of the trapezoid body in rodents and bats.** Kuwabara, N.; Zook, J.M. *Journal of Comparative Neurology*, 1992, v. 324 (4), p. 522-538. ISSN: 0021-9967.

NAL call no: QP351.J68

Descriptors: morphology, nervous system, physiology, neural coordination.

**Thrombolytic properties of Desmodus rotundus (vampire bat), salivary plasminogen activator in experimental pulmonary embolism in rats.** Witt, W.; Baldus, B.; Brongmann, P.; Cashion, L.; Donner, P.; Schleuning, W.D. *Blood*, Mar. 1992, v. 79 (5), p. 1213-1217. ISSN: 0006-4971.

NAL call no: RB145.A1B57

Descriptors: plasminogen activator, therapeutic use, pulmonary embolism.

**Vampire bat salivary plasminogen activator promotes rapid and sustained reperfusion without concomitant systemic plasminogen activation in a canine model of arterial thrombosis.**

Mellott, M.J.; Stabilito, I.I.; Holahan, M.A.; Cuca, G.C.; Wang, S.; Li, P.; Barrett, J.S.; Lynch, J.J.; Gardell, S.J. *Arteriosclerosis and Thrombosis*, Feb. 1992, v. 12 (2), p. 212-221. ISSN: 1049-8834.

Descriptors: arterial occlusive diseases, blood, fibrin metabolism, thrombosis.

**Vampire bat salivary plasminogen activator exhibits a strict and fastidious requirement for polymeric fibrin as its cofactor, unlike human tissue-type plasminogen activator: A kinetic analysis.** Bergum, P.W.; Gardell, S.J. *The Journal of Biological Chemistry*, Sep. 5, 1992, v. 267 (25), p. 17726-17731. ISSN: 0021-9258.

NAL call no: 381 J824

Descriptors: fibrin metabolism, salivary glands, plasminogen activators metabolism.

**Vampire bat salivary plasminogen activator promotes robust lysis of plasma clots in a plasma milieu without causing fluid phase plasminogen activation.** Hare, T.R.; Gardell, S.J. *Thrombosis and Haemostasis*, Aug. 1, 1992, v. 68 (2), p. 165-169. ISSN: 0340-6245.

Descriptors: antiplasmin pharmacology, fibrin, thrombosis drug therapy.

**Ventilatory response to hypoxia and hypercapnia in the torpid bat, Eptesicus fuscus.** Szewczak, J.M.; Jackson, D.C. *Respiration Physiology*, v. 88 (1-2), p. 217-232. 1992.

NAL call no: QP121 A1R4

Descriptors: hypoxia, hypercapnia, ventilatory response.

**Apneic oxygenation in the torpid bat Eptesicus fuscus.** Szewczak, J.M.; Jackson, D.C. Annual meeting of the American Society of Zoologists, American Microscopical Society, Animal Behavior Society, The Crustacean Society and The International Association of Astacology, Atlanta, GA Dec. 27-30, 1991. *Am Zool*, v. 31 (5), p. 75A, 1991.

NAL call no: 410 Am3

Descriptors: apnea, oxygenation, torpid bat.

**Doppler radar a non-invasive technique for measuring ventilation rate in resting bats.** Hays, G.C.; Webb, P.I.; French, J.; Speakman, J.R. *Journal of Experimental Biology*, v. 150 (0), p. 443-448. 1990.

NAL call no: 442.8 B77

Descriptors: ventilation rate, resting bats, measuring.

**ON-OFF units in the mustached bat inferior colliculus are selective for transients resembling "acoustic glint" from fluttering insect targets.** Lesser, H.D.; O'Neill, W.E.; Frisina, R.D.; Emerson, R.C. *Experimental Brain Research*, 1990, v. 82 (1), p. 137-148. ISSN: 0014-4819.

Descriptors: physiology, inferior colliculus, neurons, acoustic stimulation.

**Recent literature.** Griffiths, T. *Bat Research News*, 1990, v. 31 (3), p. 55-57. ISSN: 0005-6227.

NAL call no: QL737.C5 B328

Descriptors: Chiroptera, bibliographies, recent literature.

**Recent literature.** Anon. *Bat Research News*, 1990, v. 31 (2), p. 26-29. ISSN: 0005-6227.

NAL call no: QL737.C5 B328

Descriptors: Chiroptera, bibliographies, recent publications.

**Seasonal changes in pancreatic insulin and glucagon in the little brown bat, Myotis lucifugus.**

Bauman, W.A. *Pancreas*, May, 1990, v. 5 (3), p. 342-346. ISSN: 0885-3177.

Descriptors: Glucagon metabolism, Insulin metabolism, seasons, pancreas.

**Temperature effects on metabolism, ventilation and oxygen extraction in a neotropical bat.**

Chappell, M.A.; Roverud, R.C. *Respiration Physiology*, v.81 (3), p. 401-412. 1990

NAL call no: QP121 A1R4.

Descriptors: temperature, metabolism, ventilation, oxygen extraction.

**The 20<sup>th</sup> Annual North American Symposium on Bat Research.** Hoyst, G.R. *Bat Research News*,

1990, v. 31 (4), p. 67. ISSN: 0005-6227.

NAL call no: QL737.C5 B328

Descriptors: Chiroptera, meetings, North American Symposium on Bat Research.

**Vampire bat salivary plasminogen activator is quiescent in human plasma in the absence of fibrin unlike human tissue plasminogen activator.** Gardell, S.J.; Hare, T.R.; Bergum, P.W.; Cuca, G.C.; O'Neill, Palladino L.; Zavodny, S.M. *Blood*, Dec. 1990, v. 76 (12), p. 2560-2564. ISSN: 0006-4971.

NAL call no: RB145.A1B57

Descriptors: plasminogen inactivators, fibrin, fibrinogen, activator.

**Isolation, characterization, and cDNA cloning of a vampire bat salivary plasminogen activator.**

Gardell, S.J.; Duong, L.T.; Diehl, R.E.; York, J.D.; Hare, T.R.; Register, R.B.; Jacobs, J.W.; Dixon, R.A.; Friedman, P.A. *The Journal of Biological Chemistry*, Oct. 25, 1989, v. 264 (30), p. 17947-17952. ISSN: 0021-9258.

NAL call no: 381 J824

Descriptors: cloning, molecular, DNA, genetics.

**Subcellular localization of prolactin in the anterior pituitary cells of the female Japanese house bat (*Pipistrellus abramus*).** Ishibashi, T.; Shiino, M. *Endocrinology*, Philadelphia, 1989, v. 124 (2), p. 1056-1063. ref. ISSN: 0013-7227.

NAL call no: 448.8 EN2

Descriptors: prolactin, anterior pituitary, cells.

**The use of microchip implants for identifying big brown bats, *Eptesicus fuscus*.** Barnard, S.M.

*Animal Keepers Forum*, 1989, v. 16, p. 50-52.

NAL call no: QL77.5 A54

Descriptors: microchip, implant, identification.

**Variation in secretory granule ultrastructure in the submandibular gland of three species of house bats.** Tandler, B.; Phillips, C.J. 102 annual meeting of the American Association of Anatomists, New Orleans, LA. Apr. 8-12, 1989. *Anatomical Record*, v. 223 (4), p. 113A. 1989.

NAL call no: 447.8 AN1

Descriptors: submandibular gland, secretory granules, ultrastructure.

**Analysis of cold and warm receptor activity in vampire bats and mice.** Schafer, K.; Braun, H.A.; Kurten, L. *Pflugers Arch*, (West Germany) Jul. 1988, v. 412 (1-2), p. 188-194. ISSN: 0031-6768.

NAL call no: 447.8 AR2

Descriptors: warm, cold, receptor activity, bats, mice.

**Biochemical studies on mammalian hemoglobin with a special reference to bat (*Rousettus aegyptiacus*) and reindeer (*Rangifer tarandus tarandus*).** Ahmed, E.E.E., Zagazig (Egypt),

1988, 143 p.

Descriptors: hemoglobin, bat, reindeer, biochemical studies.

**Bovine leukemia virus. VII. In vitro replication of virus in bat lung cell culture NBL BLV 2.**

Patrascu, I.V. *Virologie*, Jul.-Sep. 1988, v. 39 (3), p. 199-205. ISSN: 0377-8177.

NAL call no: 448.3 R323

Descriptors: bovine leukemia virus, replication, bat lung cell culture.

**Capture methods and holding devices.** Kunz, T.H.; Kurta, A. *Ecological and Behavioral Methods for the Study of Bats*. Kunz, T.H. (ed.) 1988, p. 1-29. ISBN: 0874745969.

NAL call no: QL737.C5E3

Descriptors: capture, cages, Chiroptera.

**Design and interpretation of laboratory thermoregulation studies.** Kurta, A.; Fujita, M.S. *Ecological and Behavioral Methods for the Study of Bats*. Kunz, T.H. (ed.) 1988, p. 333-352. ISBN: 0874745969.

NAL call no: QL737.C5E3

Descriptors: thermoregulation, Chiroptera, body temperature, design.

*Ecological and behavioral methods for the study of bats*. Kunz, T.H. (ed.) Smithsonian Institution Press, Washington, DC, 1988, 533 p. ISBN: 0874745969.

NAL call no: QL737.C5E3

Descriptors: methodology, ecology, behavior, books, Chiroptera, laboratories.

**How sensitive are bats to insecticides?** Clark, D.R. Jr. *Wildlife Society Bulletin*, 1988, v. 16 (4), p. 399-403. ref. ISSN: 0091-7648.

NAL call no: SK357.A1W5

Descriptors: pesticides, insecticides, toxicity, organochlorine, milk.

**Methods in Chiropteran mitotic chromosomal studies.** Baker, R.J.; Qumsiyeh, M.B. *Ecological and Behavioral Methods for the Study of Bats*. Kunz, T.H. (ed.) 1988, p. 425-438. ISBN: 0874745969.

NAL call no: QL737.C5E3

Descriptors: mitosis, chromosomes, banding, Chiroptera, evolution.

**Methods for determining water balance in bats.** Bassett, J.E.; Studier, E.H. *Ecological and Behavioral Methods for the Study of Bats*. Kunz, T.H. (ed.) 1988, p. 373-386. ISBN: 0874745969.

NAL call no: QL737.C5E3

Descriptors: water balance, Chiroptera, methodology.

**Methods of energy budget analysis.** Kunz, T. H.; Nagy, K.A. *Ecological and Behavioral Methods for the Study of Bats*. Kunz, T.h. (ed.) 1988, p. 277-302. ISBN: 087475969.

NAL call no: QL737.C5E3

Descriptors: energy budget, food consumption, Chiroptera, radio active labeling.

**Methods of measuring metabolic rate: Respirometry.** Stack, M.H.; Rossi, D.J. *Ecological and Behavioral Methods for the Study of Bats*. Kunz, T.H. (ed.) 1988, p. 353-371. ISBN: 0874745969.

NAL call no: QL737.C5E3

Descriptors: metabolic rate, measuring techniques, Chiroptera.

**Microclimate methods.** Bakken, G.S.; Kunz, T.H. *Ecological and Behavioral Methods for the Study of Bats*. Kunz, T.H. (ed.) 1988, p. 303-333. ISBN: 0874745969.

NAL call no: QL737.C5E3

Descriptors: microclimate, air temperature, body temperature, Chiroptera.

**Radiotelemetry: Techniques and analysis.** Wilkinson, G.S.; Bradbury, J.W. *Ecological and Behavioral Methods for the Study of Bats*. Kunz, T.H. (ed.) 1988, p. 105-124. ISBN: 0874745969.

NAL call no: QL737.C5E3

Descriptors: radio-tagging, movements, technology analysis, chiroptera.

**Training bats for behavioral studies.** Gaudet, C.L. *Ecological and Behavioral Methods for the Study of Bats*. Kunz, T.H. (ed.) 1988, p. 265-275. ISBN: 0874745969.

NAL call no: QL737.C5E3

Descriptors: training, operant conditioning, motivation, unconditioned response.

**The use of microchip implants for identifying big brown bats, Eptesicus fuscus.** Barnard, S.M. *Animal Keepers Forum*, 1989, v. 16, p. 50-52.

NAL call no: QL77.5 A54

Descriptors: microchip implants, identifying, bats.

**VIP-like immunoreactivity in the anterior hypothalamic area of a hibernating bat varies with physiological state.** Laemle, L.K.; Cotter, J.R. *Brain Research*, Feb. 16, 1988, v. 441 (1-2), p. 398-402. ISSN: 0006-8993.

NAL call no: Film S-1779

Descriptors: body temperature, heart rate, immunoenzyme techniques.

**Characterization of LH-RH immunoreactivity in mammalian pituitary neural lobe by HPLC.**

Anthony, E.L.; Wu, P.; Bruhn, T.O.; Jackson, I.M. *Brain Research*, Oct. 27, 1987, v. 424 (2), p. 258-263. ISSN: 0006-8993.

NAL call no: Film S-1779

Descriptors: chromatography, radioimmunoassay, pituitary gland.

**Comparative size of vestibular nuclei in relation to flight behavior in Chiroptera.** Baron, G.; Stephan, H.; Frahm, H. *European Bat Research 1987*. Proceedings of the Fourth European Bat Research Symposium. Prague, Czechoslovakia. Aug. 18-23, 1987. i-xxiii. 1-718: Chapter pagination 263-268. ill.

Descriptors: Chiroptera, size, comparative study, flight capacity, brain, flight.

**Chromosome studies in Finnish bats.** Hongell, K.; Hagner, N.; Lokki, J.; Stjernberg, T. *European Bat Research 1987*. Proceedings of the Fourth European Bat Research Symposium. Prague,

Czechoslovakia. Aug. 18-23, 1987. Charles University Press, Prague, 1989. i-xxiii. 1-718: Chapter pagination 101-104.

Descriptors: *Eptesicus nilssonii*, *Myotis*, karyotype.

**Evaporative water loss in hibernating bats.** Cloutier, D. *Bat Research News*, 1987, v. 28 (3-4), p. 33.

ISSN: 0005-6227.

NAL call no: QL737.C5 B328

Descriptors: water relations, evaporative loss during hibernation, hibernation.

**The fruit bat as an experimental model of the neuropathy of cobalamin deficiency.** Metz, J.;

Westhuyzen, J. van der. *Comparative Biochemistry and Physiology A: Comparative Physiology*, 1987, v. 88 (2), p. 171-177. ref. ISSN: 0300-9629.

NAL call no: QP1.C6

Descriptors: vitamin B12, deficiency, nervous system diseases, disease models.

**Load carrying by flying bats.** Rayner, J.M.V.; Jones, G.; Hughes, P.M. *European Bat Research 1987*.

Proceedings of the Fourth European Bat Research Symposium. Prague, Czechoslovakia. Aug. 18-23, 1987. Charles University Press, Prague, 1989: i-xxiii, 1-718. Chapter pagination 235-245. ill.

Descriptors: *Eptesicus serotinus*, biomechanics, aerodynamics, effect of load carrying, skeletal musculature, flight, performance.

**Peripheral nerve conduction in the fruit bat with nitrous oxide induced vitamin B12 deficiency.**

Wright, P.G.; Westhuyzen, J. van der. *Comparative Biochemistry and Physiology: A Comparative Physiology*, 1987, v. 88 (2), p. 253-255. ref. ISSN: 0300-9629.

NAL call no: QP1.C6

Descriptors: vitamin B12 deficiency, nervous system diseases.

**The taxonomic implication of different morphological systems in bats.** Tiunov, M.P. *European Bat Research 1987*.

Proceedings of the Fourth European Bat Research Symposium. Prague, Czechoslovakia. Aug. 18-23, 1987. Charles University Press, Prague, 1989: i-xxiii, 1-718. Chapter pagination 67-75. ill.

Descriptors: Chiroptera, tongue, accessory glands of male, morphology.

**Tissue folates in fruit bats (*Rousettus aegyptiacus*) with nitrous oxide-induced vitamin B12 deficiency and neurological impairment.** Westhuyzen, J. van der; Davis, R.E.; Icke, G.C.;

Metz, J. *British Journal of Nutrition*, 1987, v. 58 (3), p. 485-491. ref. ISSN: 0007-1145.

NAL call no: 389.8 B773

Descriptors: vitamin B12, deficiency nervous system diseases.

*Recent advances in the study of bats.* Fenton, M. Brock (Melville Brockett), 1943; Racey, Jeramy M..V.,

International Bat Research Conference 3<sup>rd</sup>, University of Aberdeen. Cambridge University Press, 1987, xii, 470 p., ill. ISBN: 0521321603.

NAL call no: QL737.C5R29

Descriptors: Bats, Congress.

**Scanning electron microscopic observations of the dorsal tongue surface in the Japanese house bat, *Pipistrellus abramus*.** Iwasaki, S.; Miyata, K.; Wakasugi, C.; Kobayashi, K. *Journal*

*Mammal. Soc.*, Japan, 1986, v. 11 (3-4), p. 155-164. ill.

Descriptors: dorsal tongue surface, bat, scanning electron microscope.

**Studies on the metabolism of piperine: Absorption, tissue distribution and excretion of urinary conjugates in bats.** Ganesh, Bhat B.; Chandrasekhara, N. *Toxicology*, 1986, v. 40 (1), p. 83-92.

NAL call no: RA1190 T69

Descriptors: piperine, metabolism, excretion, rats, tissues.

**Chromosomes of house bat Pipistrellus abramus temminck.** Yin Liuyong; Xie Xingfu; Shi Yijun;

Shan Caihua. *Acta Zool. Sin.* 1985, v. 31 (3), p. 296-298. ill.

NAL call no: 410 AC87

Descriptors: chromosomes, house bat.

**Interspecific comparison of subcutaneous tissue fluid pressure in the bat wing.** Bassett, J.E.; Wiederhielm, C.A.; Hogan, R.D. *Microvascular Research*, 1985, v. 30 (1), p. 75-79. ill. ISSN: 0026-2862.

Descriptors: forelimbs, osmotic relations, wing subcutaneous fluid pressure.

**Plasma amino acids and tissue methionine levels in fruit bats (*Rousettus aegyptiacus*) with nitrous oxide induced vitamin B-12 deficiency.** Westhuyzen, J.van der; Tonder, S.V. van; Gibson, J.E.; Kilroe-Smith, T.A.; Metz, J. *British Journal of Nutrition*, 1985, v. 53 (3), p. 657-662. ref. ISSN: 0007-1145.

NAL call no: 389.8 B773

Descriptors: vitamin B12, deficiency, amino-acids, blood, methionine.

**The sensory basis of prey location by the California leaf-noses bat, *Macrotus californicus* (Chiroptera: Phyllostomidae).** Bell, Gary P. *Behavioral Ecology & Sociobiology*, 1985, v. 16 (4), p. 343-347. ISSN: 0340-5443.

NAL call no: QL751.B4

Descriptors: predatory behavior, foraging behavior.

**Ventilation and lung oxygen extraction in the bat *Pteropus poliocephalus* acutely exposed to simulated altitudes from 0 to 11 kilometers.** Thomas, S.P.; Thomas, D.B.; Thomas, G.S. 69<sup>th</sup> Annual Meeting of the Federation of American Societies for Experimental Biology, Anaheim, CA. Apr. 21-26, 1985. *Fed Proc*, v. 44 (4), p. 1349.

NAL call no: 442.9 F31P

Descriptors: lung oxygen extraction, ventilation, altitudes.

**Betaine delays the onset of neurological impairment in nitrous oxide-induced vitamin B-12 deficiency in fruit bats.** Westhuyzen, J. van der; Metz, J. *Journal of Nutrition*, 1984, v. 114 (6), p. 1106-1111. ref. ISSN: 0022-3182.

NAL call no: TX341.J6

Descriptors: vitamin B12, deficiency, nervous system diseases, betaine.

**Distribution of five neuropeptides in the stomachs of selected bats.** Phillips, C.J. *Bat Research News*, 1984, v. 25 (3-4), p. 48-49. ISSN: 0005-6227.

NAL call no: QL737.C5 B328

Descriptors: Chiroptera, stomach, neurosecretion, hormones, neuropeptides.

**Effect of L-dihydroxyphenylalanine (L-dopa) and methionine on tissue S-adenosylmethionine concentrations in cobalamin-inactivated fruit bats.** Gibson, J.; Westhuyzen, J. van der. *International Journal for Vitamin and Nutrition Research*, 1984, v. 54 (4), p. 329-332. ref. ISSN: 0300-9831.  
NAL call no: 389.8 Z33  
Descriptors: vitamin B12, deficiency, tissues, adenosylmethionine, dopa, supplements.

**Lipid composition of the brain in the cobalamin inactivated fruit bat *Rousettus aegyptiacus*.** Westhuyzen, J. van der; Gibson, J.E. *International Journal for Vitamin and Nutrition Research*, 1984, v. 54 (2-3), p. 205-210. ref. ISSN: 0300-9831.  
NAL call no: 389.8 Z33  
Descriptors: vitamin B12, deficiency, lipids, brain, folic acid, supplements.

**A suspected infrared-recipient nucleus in the brainstem of the vampire bat, *Desmodus rotundus*.** Kishida, R.; Goris, R.C.; Terashima, S.; Dubbeldam, J.L. *Brain Research*, Nov. 26, 1984, v. 322 (2), p. 351-355. ISSN: 0006-8993.  
NAL call no: Film S-1779  
Descriptors: physiology. Phylogeny, snakes anatomy, Chiroptera.

**Unusual smooth endoplasmic reticulum in submandibular acinar cells of the male round-eared bat, *Tonatia sylvicola*.** Nagato, T.; Tandler, B.; Phillips, C.J. *Journal of Ultrastructure Research*, 1984, v. 87 (3), p. 275-284. ill.  
NAL call no: 440.8 J822  
Descriptors: endoplasmic reticulum, salivary glands, gland acinar cells, submandibular.

**Ventilation and oxygen extraction in the bat *Phyllostomus hastatus* during rest and steady flight.** Thomas, S.P.; Lust, M.R.; Van Riper, H.J. *Physiological Zool.* 1984, v. 57 (2), p. 237-250. ill.  
NAL call no: 410 P56  
Descriptors: ventilation, oxygen extraction, rest, steady flight.

**Vitamin B12 deficiency alters the distribution of membrane proteins on linear sucrose gradients in the fruit bat brain.** McLoughlin, J.L.; Cantrill, R.C. *Neuroscience Letters*, Aug. 24, 1984, v. 49 (1-2), p. 175-180. ISSN: 0304-3940.  
NAL call no: QP351 N3  
Descriptors: brain chemistry, metabolism, vitamin B12 deficiency, Chiroptera.

**Effect of vitamin B12 deficient diet on lipid and fatty acid composition of spinal cord myelin in the fruit bat.** Westhuyzen, J. van der; Cantrill, R.C.; Fernandes, Costa F.; Metz, J. *Journal of Nutrition*, 1983, v. 113 (3), p. 531-537. ref. ISSN: 0022-3166.  
NAL call no: 389.8 J82  
Descriptors: fatty acids, myelin, spinal cord, vitamin B12, deficiency.

**Tissue S-adenosylmethionine levels in fruit bats (*Rousettus aegyptiacus*) with nitrous oxide-induced neuropathy.** Westhuyzen, J. van der; Metz, J. *British Journal of Nutrition*, 1983, v. 50 (2), p. 325-330. ref. ISSN: 0007-1145.  
NAL call no: 389.8 B773  
Descriptors: nervous system diseases, aetiology, nitrous oxide, adenosylmethionine.

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Descriptors: Pteropus, viral diseases, transmission of viruses, equine morbillivirus.

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Descriptors: bats, encephalomyelitis, vectors.

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Descriptors: Chiroptera, viral diseases, virus infection, Venezuelan encephalitis virus.

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**Virus infections of bats.** Sulkin, S Edward; Allen, Rae, Basel, Karger, 1974, viii, 103 p., ill.

*Monographs in virology* v. 8.

NAL call no: QR301.S9

Descriptors: bats, carriers of disease, laboratory animals, virus diseases.

## **SELECTED WEB SITE REFERENCES FOR BATS**

AZA Bat Taxon Advisory Group.

[www.riverbanks.org/battag/](http://www.riverbanks.org/battag/)

From the American Zoo and Aquarium Association. Education, species listing, husbandry manual, regulatory, enrichment and links.

Bat Atlas.

<http://sves.anu.edu.au/associated/batatlas/index.html>

Up-to-date information on flying-foxes, especially in Australia.

Bat Brood and Nesting Boxes.

<http://dragonet.com/bat/>

Purchase bat brooding and nest boxes.

Bat Conservation International.

[www.batcon.org/](http://www.batcon.org/)

Bat information, conservation information, publications, annual report.

Bat Conservation and Management.

[www.batmanagement.com/](http://www.batmanagement.com/)

Services related to bats, roosts, links, etc.

Bat Echolocation.

[www.bats.org.uk/batinfobatdets.htm](http://www.bats.org.uk/batinfobatdets.htm)

Information on bat sounds, recorded sounds for listening plus bat detector supplies.

Bat Ecology and Bioacoustic Lab. - Bristol.

[www.bio.bris.ac.uk/research/bats/batpage.htm](http://www.bio.bris.ac.uk/research/bats/batpage.htm)

Journal papers, books, short works, etc. Bat web, bioacoustics.

Bat Facts.

[www.si.edu/resource/faq/nmnh/batfacts.htm](http://www.si.edu/resource/faq/nmnh/batfacts.htm)

General information on bats from the Smithsonian Institution.

Bat Flight.

[www.nurseminerva.co.uk/adapt/bat.htm](http://www.nurseminerva.co.uk/adapt/bat.htm)

Good information on bat flight with structure, anatomy and muscle action diagrams and explanations plus references.

Bat Lyssavirus Information for Medical Practitioners.

[www.health.gov.au/pubhlth/strateg/communic/lyshlth.htm](http://www.health.gov.au/pubhlth/strateg/communic/lyshlth.htm)

Information on pre and post exposure and treatment plus State and Territory Public Health contacts from the Australian Department of Public Health and Ageing.

BATS - Management Initiatives for the Sustainability of Bat Populations.

<http://users.erols.com/nolan/vivian/bats.htm>

Lots of good information on managing and sustaining bat populations.

Bat Printout.

<http://www.enchantedlearning.com/subjects/mammals/bat/Batcoloring.shtml>

Information on bats, animal printouts, label me printouts for kids.

Bat Research Laboratory.

<http://klingon.iupucs.iupui.edu/~bat/>

Biosonar models for research.

Bat Research News.

<http://thames.northnet.org/bats>

A journal about bats, bat researchers and bat workers. Papers, meetings, etc. Electronic or hard copies by subscription.

Bat Links.

<http://kalan.freeyellow.com/page39.html>

Information links for bats.

Bat Thematic Unit.

[www.cccoe.k12.ca.us/bats/welcome.html](http://www.cccoe.k12.ca.us/bats/welcome.html)

Resources, publications, science, art, environment.

Build a Bat House.

<http://lancaster.unl.edu/enviro/pest/factsheets/265-95.htm>

Bat houses for sale. Various models.

Big Brown Bat.

<http://wildwnc.org/af/brownbat.html>

General information of the Big Brown Bat from the Nature Center.

Big Brown Bat Coloring Page.

<http://dep.state.ct.us/burnatr/wildlife/kids/batcol.htm>

Information and coloring page for kids from the Connecticut Department of Environmental Protection.

Big Fruit Bat.

[www.zooregon.org/cards/Rainforest/bat.fruit.big.htm](http://www.zooregon.org/cards/Rainforest/bat.fruit.big.htm)

General information about the Big Fruit Bat from the Oregon Zoo.

Biosis resource Guide - Mammalia - Chiroptera.

[www.biosis.org.uk/zdocs/zoolinfo/mam\\_chir](http://www.biosis.org.uk/zdocs/zoolinfo/mam_chir)

Information on bats and links.

Build a Bat House.

<http://lancaster.unl.edu/enviro/pest/factsheets/265-95.htm>

From the University of Nebraska Cooperative Extension. Instructions on how to build a bat house.

Build a Simple Bat detector.

<http://pw1.netcom.com/~t-rex/BatDetector.html>

Instructions on how to build a simple bat detector plus kits and assembled detectors.

Canadian Bat Resources.

[www.cancaver.ca/bats/](http://www.cancaver.ca/bats/)

Information on Canadian bats and conservation.

Centre chauves-sauves Suisse occidentale/Swiss Bat Centre.

[www.ville-ge.ch/musinfo/mhng/cco/](http://www.ville-ge.ch/musinfo/mhng/cco/)

Database of more than 900 scientific bibliographic references in English and French.

Chiroptera Cabin Company.

[www.chiropteracabins.com](http://www.chiropteracabins.com)

Cabins and condos for Chiroptera Cuties. Bat houses, cabins, boxes, condos.

Chiroptera Links.

<http://kalan.freeyellow.com/page39.html>

Information links for bats.

Chiroptera Neotropical.

[www.unb.br/ib/zoo/chiroptera/](http://www.unb.br/ib/zoo/chiroptera/)

Newsletter of the World Conservation Union & Chiroptera specialists Group. Articles, news, publications, links.

Chiroptera Nightfliers.

[www.ucmp.berkeley.edu/mammal/eutheria/chiroptera.html](http://www.ucmp.berkeley.edu/mammal/eutheria/chiroptera.html)

Fossil records, Life history & Ecology, Systematics morphology.

Coalition of North American Bat Working Groups.

[www.batworkinggroups.org/](http://www.batworkinggroups.org/)

Information on conserving bats and their habitat, chat discussion groups, etc.

Discovery on Line - Bat hangouts.

[www.discovery.com/news/features/bats/bats.html](http://www.discovery.com/news/features/bats/bats.html)

Slide shows and miscellaneous information on bats.

D.I.Y. Bat Detector (low cost).

[www.btinternet.com/~mr.pentops.bat.htm](http://www.btinternet.com/~mr.pentops.bat.htm)

A project to convert a small transistor radio into an ultrasonic detector for listening to bats.

Instructions on how to do it.

The Evolution Store.

[www.evolutionnyc.com/IBS/SimpleCat/Shelf/ASP/Hierarchy/020y.html](http://www.evolutionnyc.com/IBS/SimpleCat/Shelf/ASP/Hierarchy/020y.html)

Prints, books, medical models, fossils, etc.

Geo Zoo Mammals - Bats.

[www.geobop.com/Mammals/Chiroptera/](http://www.geobop.com/Mammals/Chiroptera/)

Dental formula, information and links for bats.

The Hoary Bat.

[www.ireseau.com/usagers/marcelg/chsou\\_an.htm](http://www.ireseau.com/usagers/marcelg/chsou_an.htm)

General information about the Canadian Hoary bat and links.

House Bat Management - USGS.

[www.npwrc.usgs.gov/resource/1998/housebat.htm](http://www.npwrc.usgs.gov/resource/1998/housebat.htm)

Information and procedures on managing house bats, hazards, problems, public health hazards, repellents, bat proofing, etc.

Infant Insectivorous Bat Rehabilitation.

[www.skypoint.com/members/mikefry/bat.html](http://www.skypoint.com/members/mikefry/bat.html)

Information on raising and rehabilitating of infant insectivorous bats.

Kaushik Ghose: attention in the bat's echolocation system.

[www.wam.umd.edu/~kgħoże/research.html](http://www.wam.umd.edu/~kgħoże/research.html)

Research information from the University of Maryland Bat Lab and links.

Links to Bat Web Sites - USGS.

[www.mesc.usgs.gov/links/bat\\_web\\_sites.html](http://www.mesc.usgs.gov/links/bat_web_sites.html)

Midcontinental Ecological Science Center with links to various bat web sites.

Little Brown Bat.

[www.wildlife.state.nh.us/Brownbat\\_facts.htm](http://www.wildlife.state.nh.us/Brownbat_facts.htm)

Facts about the Brown Bat from the University of New Hampshire Cooperative Extension.

Lube Foundation Bat Collection.

[www.cafl.com/lubee/collect.htm](http://www.cafl.com/lubee/collect.htm)

A unique collection of bats housed in captivity, including the world's largest and smallest bat.

Mammal Image Library Catalog.

[www.emporia.edu/biosci/ms/chiro.htm](http://www.emporia.edu/biosci/ms/chiro.htm)

Order Chiroptera. Slides of Chiroptera Families.

Mexican Free-Tailed Bat.

[www.thewildones.org/Animals/mexfree.html](http://www.thewildones.org/Animals/mexfree.html)

General information about the Mexican Free-Tailed Bat plus other information about bats for kid. In Spanish and English.

Model Systems in Neuroethology-Echolocation in the Bat.

[http://soma.npa.uiuc.edu/courses/phys/490b/models/bat\\_echolocation/bat\\_echolocation.html](http://soma.npa.uiuc.edu/courses/phys/490b/models/bat_echolocation/bat_echolocation.html)

Information on echolocation and the auditory cortex in bats.

North American Symposium on Bat Research.

[www.nasbr.com/](http://www.nasbr.com/)

A society to promote and develop the scientific study of bats. workshops and conferences.

Order Chiroptera.

<http://animaldiversity.ummz.umich.edu/chordata/mammalia/chiroptera.html>

Information on Megachiroptera and Microchiroptera from the University of Michigan Museum of Zoology.

Rachel's Bat Basics.

<http://luna.cas.usf.edu/~rviggian/batspage.htm>

Basic bat biology and links to other bat sites.

Scott's Bat House Page.

<http://ucs.orst.edu/bat/bathome.htm>

Bat house designs and links to other sites.

South-Eastern Australia Bat Call Library.

<http://batcall.csu.edu.au/batcall/batcall1.html>

A directory of recorded bat calls and an exchange for bat calls. A central source of reference calls of SE Australian bats.

Vampire Bat.

[www.scz.org/animals/b/vampire.html](http://www.scz.org/animals/b/vampire.html)

General information on vampire bats from the Sedgwick County Zoo plus other information.

Walker's Mammals of the World Online - Order Chiroptera.

[www.press.jhu.edu/books/chiroptera.html](http://www.press.jhu.edu/books/chiroptera.html)

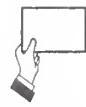
Information on bat families from Johns Hopkins University Press.

Western Red Bat.

[www.gf.state.az.us/frames/fishwild/ngame\\_m.htm](http://www.gf.state.az.us/frames/fishwild/ngame_m.htm)

General information on the Western Red Bat.





## Services Available to Individuals

The National Agricultural Library (NAL) supplies agricultural materials not found elsewhere to other libraries and information centers. Submit requests **first to your local library resources**. In the United States, possible sources are public libraries, state libraries, land-grant university or other large research libraries within a state. In other countries submit requests through major university, national, or provincial institutions.

If the publications are not available from these sources, have your library submit requests to NAL with a statement indicating their non-availability. Submit one request per page following the information below.

**Information for the Library** (The following information is provided to assist your librarian in obtaining the required materials.)

**Interlibrary Loan Service --** Photocopies are available on interlibrary loan for a fee. Submit a separate interlibrary loan form or request for each item. If the citation is from an NAL database (AGRICOLA, *Bibliography of Agriculture*, or the NAL Catalog) and the call number is given, please include it. Willingness to pay charges must be indicated on the form. Materials in NAL's collection are loaned only to other U.S. and Canadian libraries. The following materials are not loaned: serials; rare, reference, and reserve books; microforms; and proceedings of conferences or symposia. Photocopy or microform of non-circulating publications may be requested for a fee provided that the request does not exceed 50 pages per item. Request must also include copyright compliance -- Pre-printed forms must contain your signature to indicate copyright compliance. On e-mail requests include the complete Statement of Copyright Compliance ("I have read the warning on copyright restrictions and accept full responsibility for compliance."), **your full name, date, and telephone number in each request**. Libraries may indicate compliance by including the initials of one statement, either "CCL" for compliance with the copyright law or "CCG" for compliance with Copyright Guidelines or a statement that the request complies with U.S. Copyright Law or other acceptable copyright laws (i.e. IFLA, CLA, etc.). Libraries must also provide authorizing official's name. Requests will be rejected if this information is not included.

### Charges:

- Photocopy from paper, or paper copy of microfilm and microfiche for domestic delivery -- \$13.00 up to 50 pages. Photocopy from paper, or paper copy of microfilm and microfiche for international delivery -- \$16.00 up to 50 pages. (International delivery via Internet is \$13.00.)
- Duplication of NAL-owned microfilm -- \$20.00 per reel
- Duplication of NAL-owned microfiche -- \$13.00 for each 5 fiche

**Billing --** Charges include postage and handling, and are subject to change. Invoices are issued quarterly by the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161. Phone: (703) 605-6640. Establishing a deposit account with NTIS is encouraged. **DO NOT SEND PREPAYMENT.**

### Send Requests to:

USDA, National Agricultural Library  
Document Delivery Services Branch, PhotoLab  
10301 Baltimore Ave., NAL Bldg.  
Beltsville, Maryland 20705-2351

FAX: 301-504-5675  
Ariel IP address: ariel.nal.usda.gov  
E-mail: [lending@nal.usda.gov](mailto:lending@nal.usda.gov)

Contact the Access Services, Document Delivery Services Branch at (301) 504-6503 or via Internet at [access@nal.usda.gov](mailto:access@nal.usda.gov) with questions or comments about this policy.



## Services Available to Libraries, Institutions and Organizations

The National Agricultural Library (NAL) accepts requests from libraries and other organizations in accordance with the national and international interlibrary loan code and guidelines. In its national role, NAL supplies copies of agricultural materials not found elsewhere. Submit requests to major university libraries, national or provincial institutions or network sources prior to sending requests to NAL. If the needed publications are not available from these sources, submit requests to NAL with a statement indicating their non-availability. **Materials in NAL's collection are not loaned outside the United States; however, copies of materials may be provided.** There is a limit of 50 pages per item to comply with copyright law.

**AGLINET** -- Requesters in countries with an AGLINET library are encouraged to make full use of that library and its networking capabilities. As an AGLINET participant, NAL provides free document delivery service for materials published in the United States to other AGLINET participants.

**Requests** -- Submit requests on the American Library Association (ALA) or the International Federation of Library Associations and Institutions (IFLA) interlibrary loan form, or via electronic mail, Ariel™, or facsimile. (See further details under *For Electronic Access and Delivery* below.)

### Charges:

- Photocopy, paper copy of microfilm and microfiche – \$13.00 up to 50 pages if mailed to domestic address. \$16.00 if mailed to international address. \$13.00 if sent via Internet.
- Duplication of NAL-owned microfilm–\$20.00 per reel
- Duplication of NAL-owned microfiche–\$13.00 for each 5 fiche or portion thereof
- Loans – \$15.00 per loan

**Billing** -- Charges include postage and handling, and are subject to change. Invoices are issued quarterly by the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161. Phone: (703) 605-6640. Establishing deposit accounts with NTIS is encouraged. Annual billing is available on request by contacting NAL at the address below. **DO NOT SEND PREPAYMENT.** You will be invoiced.

### For postal service delivery send requests to:

USDA National Agricultural Library  
PhotoLab  
Document Delivery Services Branch  
10301 Baltimore Ave., NAL Bldg.  
Beltsville, Maryland 20705-2351

### For electronic access and delivery :

The Document Delivery Services Branch accepts ILL requests from libraries via several electronic methods. All requests must comply with established routing and referral policies and procedures. A sample format for ILL requests follows.

**INTERNET.....**.....lending@nal.usda.gov  
Start the subject line with one word format:

3 letter month abbreviation + day + NAL + # of request placed that day,

*For Example:* jul25NAL4 (if this is the fourth request on July 25).

*For Example:* jul 25NAL1-4 (if this is four requests submitted at one time)

(over)

**OCLC.....**.....AGL



## TELEFACSIMILE.....301-504-5675

Requests can be created on standard ILL forms and then faxed. NAL will fill via FAX at no additional cost if FAX number is included on request. NAL will send up to 30 pages per article. If request exceeds 30 pages, NAL will ship via postal service. There is no RUSH service.

## ARIEL™ .....ariel.nal.usda.gov

NAL will fill the request via ARIEL™ if the ARIEL™ address is included in the request. NAL treats ARIEL™ at an alternative delivery mechanism--not an expedited service. NAL will send up to 30 pages per article via ARIEL™. If request exceeds 30 pages, NAL will ship via postal service.

### Required data elements for all requests:

- Complete mailing information for all requests regardless of method of delivery. (Borrower's Fax number or ARIEL™ IP address if delivery by either of these methods is desired.)
- Complete citation including verification (source of citation) and NAL call number if available.
- Date after which item is no longer needed.
- Copyright Compliance -- Pre-printed forms must contain your signature to indicate copyright compliance. On e-mail requests include the complete Statement of Copyright Compliance. Libraries may indicate compliance by including the initials of one statement, either "CCL" for compliance with the copyright law or "CCG" for compliance with Copyright Guidelines or a statement that the request complies with U.S. Copyright Law or other acceptable copyright laws (i.e. IFLA, CLA, etc.). Libraries must also provide authorizing official's name. Requests will be rejected if this information is not included.
- Maximum cost you are willing to pay for billing purposes.

### Sample Electronic Mail Request

(Your Institutions Name)/NAL      JUL25NAL1    Date Not Needed After:  
9/25/00

(Your Department or Office  
Your University Library or Institution  
City, State or Province, Country, Mail Code)

Dr. Smith (patron name)      Biology Dept. (patron office)  
Canadian Journal of Soil Science 1988 v 68(1): 17-27 (complete citation)  
De Jong, R. Comparison of two soil-water models under semi-arid growing  
conditions

**NAL Call Number:** 56.8 C162      **Ver:** AGRICOLA

**Remarks:** Not available at university or in region

**Authorized by:** Charles Johnson

**CCL**    **Maxcost:** \$15.00

Contact the Access Services Librarian, Document Delivery Services Branch at (301) 504-6503 or via Internet at [access@nal.usda.gov](mailto:access@nal.usda.gov) with questions or comments about this policy.



## Services Available to USDA Employees

Copies or loans of NAL materials are provided free-of-charge in response to job-related requests. Requests for materials may be submitted onsite in person, electronically (via ARIEL™, email or facsimile) or by U.S. Postal Service. Employees eligible for service from a local library such as ARS field libraries or Forest Service libraries should make use of these resources before contacting the National Agricultural Library (NAL).

### Copy Service

A single copy may be provided, in lieu of loan, from materials in the NAL collection. All requests must indicate compliance with copyright restrictions. Providing complete, accurate citations and the NAL call number for a document (if available) will speed the processing of requests.

### Loan Service

The loan period for NAL materials is one month. Loans may be renewed for an additional month if no one else is waiting to use the material. Make renewal requests in writing or by calling (301) 504-5755 prior to the due date.

### Booking Audiovisuals

Submit request at least 3-4 weeks before the intended show date when requesting specific audiovisual titles. Specify the particular format preferred if more than one format is given in the citation. To renew audiovisuals or inquire about booking audiovisual materials call (301) 504-5994.

### Copies from Non-Circulating Materials

The following materials are non-circulating: Serials (except for USDA serials); rare, reference, and reserve books; microforms; and proceedings of conferences or symposia. Although these materials may not be borrowed if NAL only owns one copy, requests may be filled in the form of a microform or paper copy if your request indicates copyright compliance. Please indicate on your original request form if a copy of the material is acceptable in place of a loan.

### Delivery Options

Electronic delivery is the preferred method of document delivery at NAL. Copies of journal articles and duplicated microform materials are delivered by facsimile, ARIEL™, or U.S. Postal Service. Copies of material will be delivered electronically whenever a fax number or ARIEL™ IP address appears on the request. Books borrowed from other sources will be delivered by FedEx to ensure their safety and receipt.

### Interlibrary Borrowing or Purchase

If materials are not available at the NAL, we will try to obtain them from another source. Turnaround time on interlibrary loans varies depending on location and availability of materials. If an item cannot be obtained through borrowing, NAL will attempt to purchase it, which also adds to the turnaround time.

154

### How to Format Requests

All requests, regardless of format, **must** include the data elements listed below. A separate request form must be submitted for each document. When requesting via e-mail, however, more than one request form may be included in the same e-mail message.



## Required Data Elements

- Borrower's name, full mailing address, and USDA or other eligible agency name. On e-mail requests this information must be in block format with at least two blank lines above and below so form may be used in a window envelope.
- Complete citation including verification (source of citation) and NAL call number if available.
- Date after which item is no longer needed.
- Copyright Compliance  
Pre-printed forms must contain your signature to indicate copyright compliance. On e-mail requests include the complete Statement of Copyright Compliance ("I have read the warning on copyright restrictions and accept full responsibility for compliance"), **your full name, date, and telephone number in each request**. Libraries may indicate compliance by including the initials of one statement, either "CCL" for compliance with the copyright law or "CCG" for compliance with Copyright Guidelines. Requests will be rejected if this information is not included.
- Fax number or ARIEL™ IP address (if delivery by either of these methods is desired).

## E-Mail Request Procedures

**E-mail:** [lending@nal.usda.gov](mailto:lending@nal.usda.gov)

Electronic mail requests may be sent via the Internet to the address above. Multiple requests may be included in a single message if they are complete unto themselves, contain all of the required data elements and closely resemble the samples below. Each request within a message must be formatted as an individual request complete with name, address, copyright compliance, and request ID number. Use the following standardized number format to identify the requests included in the e-mail message:

1st request sent to NAL on July 25 will be jul25NAL1

2nd request sent to NAL on July 25 will be jul25NAL2

Each request should cite this identification number on the request form. The number or range of numbers if more than one request is included in the same e-mail message (ex: jul25NAL1-4) should also appear in the subject line of the e-mail message.

## ARIEL™ Request Procedures

**NAL IP Address:** [ariel.nal.usda.gov](http://ariel.nal.usda.gov)

ARIEL™ is a document delivery software package (available from Research Libraries Group) which allows documents to be scanned and sent over the Internet. Requests can be submitted via email, mail, etc., or created on one of the standard forms listed under "Mail" below, scanned and sent to NAL's IP address. If an ARIEL™ 'receive only' package is loaded on to your computer you can receive and print articles at your desktop. If an ARIEL™ address is included in a request, NAL will deliver up to 30 pages per article via ARIEL™. If the article length exceeds 30 pages or cannot be scanned reliably, NAL will deliver the material via Postal Service. For more information about this software (including equipment requirements) visit RLG's ARIEL™ WWW site ([http://www.rlg.org/cgi-bin/print\\_hit\\_bold.pl/ariel.html](http://www.rlg.org/cgi-bin/print_hit_bold.pl/ariel.html)).

## Mail & Fax Requests

Requests may be sent to NAL via the U.S. Postal Service or facsimile. Requests should be submitted using one of the standard forms listed below.

- AD-245 (available from USDA procurement)
- CALS Printout - copy & complete the address & copyright information from the AD245 on to the back of the CALS printout.
- Individual Request Form (IRF)
- ALA or FILLS Interlibrary Loan Form

Mailing Address: **Fax Number:** (301) 504-5675

National Agricultural Library  
Document Delivery Services Branch, 6th Floor  
10301 Baltimore Avenue  
Beltsville, MD 20705-2351

## Sample Electronic Mail Request

JUL25NAL1      Date Not Needed After: 8/25/2000

Richard Smith  
ARS, USDA  
Research Station  
Heartland, IA 56789

Canadian Journal of Soil Science 1988 v 68(1): 17-27  
De Jong, R. Comparison of two soil-water models under semi-arid growing conditions.

**NAL Call Number:** 56.8 C162      **Ver:** AGRICOLA

I have read the warning on copyright restrictions and accept full responsibility for  
compliance

Richard Smith      7/25/00      Phone# (301)555-1234  
(your) Fax#: (301)555-5678      (your) ARIEL IP Address: 111.222.333.444.555





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